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THE COVER

Here you see materials handling in its fullest concept. H. A. Johnson's new plant in suburban Boston (see article Page 17) has no elevators. The high-lift fork truck not only is serving its intended function but, also, it is doubling for an elevator. This extra-dividend function is tied-in with a photo-electric cell that opens and closes the second floor doors automatically.

DISTRIBUTION AGE

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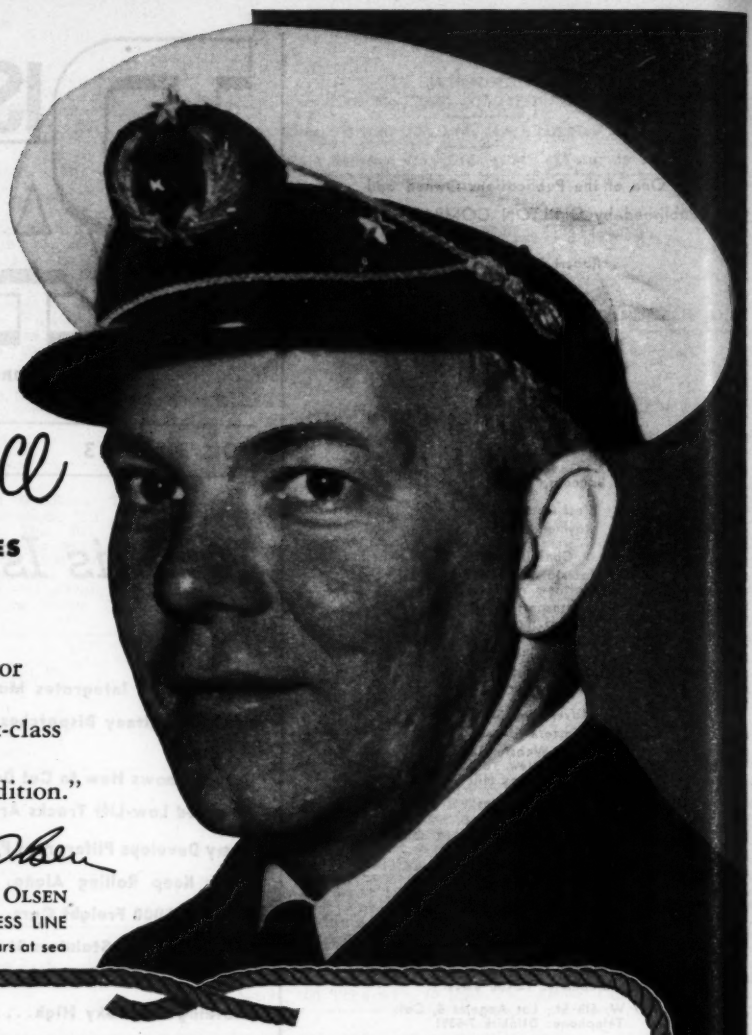

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On the Line — DA — EDITORIAL COMMENT

Same Patter, Same Pattern

AS WE go to press, the chief topic of conversation is the steel wage "rassling" bout just ended in New York City. The "open hearth" hearings are making front-page headlines in all the newspapers throughout the country.

In characteristic "Bessemer process," this white hot subject was fed a blast of Murray's grandiloquent hot air. However, the pure facts will be hard to overlook by all fair thinkers, the WSB, and even the politicians. Evidence that the facts gave friend Phil a hot foot was his explosive denial of some of the basic testimony presented.

Surely, privately if not publicly, the United Steel Workers' president must realize the truth of Charlie White's (Republic Steel's president) warning that any rise in wages will have to be accompanied by a rise in prices; that high-priced steel will result in consumer resistance and use of substitute materials.

Murray's tongue must have been in his cheek when he presented counter-arguments to Bob Tyson's (U. S. Steel VP and comptroller) logic that an alternate method of meeting the $1.14 cost increase per man-hour would be to use all money being employed for expansion, dividends and taxes. And, doubtlessly, Tyson's slyly naive observation that another alternative might be to produce and sell more steel with the same man-hour production—a solution that "the union has at no time suggested"—must have been very repugnant.

But, from where we sit, the atomic punch was delivered by U. S. Steel's Brad Smith when he said that steel is fast becoming a push-button industry, requiring less and less hard physical labor from its employees. Brad should have written these words on the wall for King Phil to read.

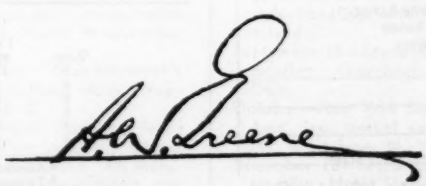
King John (L. Lewis) failed to heed a similar warning and he turned out to be the automatic heating industry's greatest salesman—and, in the process, incurring for the first time in his long reign loud outspoken wrath of his anthracite workers.

And, now, as the scene shifts to Pittsburgh, it is quite obvious that Murray is following the same patter and the same pattern.

If the outcome of the steel wage wrangle works out as predicted by Washington's wise, winking labor experts, we will have the sixth round of wage increases. But it will be an ill wind if it will not benefit the materials handling industry.

Labor will be too expensive to use abundantly. American industry will be forced to mechanize every step of handling raw materials; processing of products; handling, transporting and warehousing the finished goods.

Phil Murray will follow John Lewis' footsteps as a great salesman—the world's greatest salesman of materials handling equipment.



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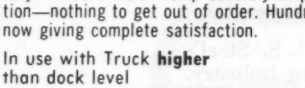
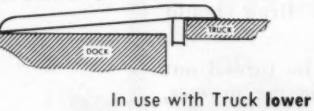


In use with Truck **lower** than dock level



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LETTERS TO THE EDITOR

City Personal Property Tax

To the Editor:

Recently the city assessor of Saginaw has been concentrating on our storage customers and is requiring them to file personal property tax forms and pay city personal property taxes.

It is our contention that goods owned by *out of state manufacturers* stored with us and sold only to wholesalers are actually still in interstate commerce and should not be taxed by a local unit of government. However, the assessor maintains that *all* goods stored in our warehouse are subject to this tax.

Are there any rulings on this subject which we might bring to his attention to prove our point?—*Wallace C. Strobel, Manager, Central Warehouse Company, Saginaw, Mich.*

(This is a very important subject of law, and soon I shall write a special article, as based on late and leading higher court cases for publication in DISTRIBUTION AGE. *This article will contain all relevant and to-the-point citations that you can use for the purpose of avoiding future litigations on tax controversies.*

I have written up every higher court decision rendered the past 22 years on this subject. Hence, I can give you—off hand and not much detail—my opinion as follows:

So far as I can state to you, there are no higher court cases that hold goods are not *subject to state taxation, if these goods are merely placed in storage for distribution in the ordinary course of business.*

A higher court in the state of Georgia, however, established this law: If a seller has taken a contract from a seller to deliver a certain quantity of merchandise within a specified period of time, the seller may ship this merchandise to a warehouse company and it remains under the interstate commerce laws until the purchaser orders the merchandise shipped him from the warehouse.

In other words, under such a contract, the goods remain in interstate commerce until delivered to the purchaser.

On the other hand, if a seller merely sends goods to a warehouseman for storage, and then later orders the warehouseman to ship the goods out to purchasers, these goods are subject to state taxation.

The same law is applicable to goods stopped in transit for sorting, packaging, etc. These goods are taxable by state. But if goods are stopped in transit—due to floods, high water, and the like—such goods remain in interstate commerce.

Please watch for my very comprehensive review of higher court cases on this subject of taxation that will appear soon in DISTRIBUTION AGE.—*Leo T. Parker, Legal Consultant.*

More Red Ink for Post Office?

To the Editor:

Effective January 1, 1952, Congress provided weight limits of 20 lb per package for parcel post between or to first class post offices in the United States for Third through Eighth Parcel Post Zones.

It is generally understood that the purpose of these weight limitations was to divert larger packages from parcel post to Railway Express Agency, and possibly to freight services, in an attempt to take the Post Office Department out of the so-called freight business.

The proponents of this plan, in hearings before Congressional committees, are on record that larger packages handled by parcel post have and will cause large deficits in the Post Office Department.

For the record, regarding H. R. 2945, Alfred L. Hammell, president, Railway Express Agency, has stated that express shipments had decreased over 12 million shipments, or by 58.7 per cent—comparing March, 1946, with March, 1950. His testimony states that this was due to low parcel post rates; and, presumably, these shipments lost to Railway Express were carried by parcel post.

The accompanying table shows a simple comparison of parcel post and express rates (exclusive of the 3 per cent transportation tax on the latter) for a 40-lb shipment. Such a comparison could be greatly amplified for many additional weights without significant differences in what it attempts to demonstrate.

(*Please Turn to Page* 90)

Zone	1 Carton 40 lbs.[1]	2 Cartons 40 lbs.[2]	Extra Cost for 2 Cartons	Railway Express Charges for Cities in Same Zones[3]
3	$1.54	$1.68	$.14	$2.68 (New York City)
4	2.05	2.20	.15	3.12 (Chicago)
5	2.85	3.00	.15	3.99 (Kansas City)
6	3.84	3.98	.14	4.76 (Dallas)
7	4.74	4.88	.14	6.12 (Salt Lake City)
8	5.73	5.86	.13	7.40 (San Francisco)

[1] Allowed under parcel post weight limits prior to January 1, 1952.
[2] To comply with parcel post weight limits effective January 1, 1952.
[3] Excluding Federal Transportation Tax of 3 percent.

CHUTING THE NEWS

Need Freight Cars: Knudson

Describing the nation's railroads as a "bullwark of defense," the DTA's James K. Knudson has urged the production of more railroad freight cars to handle increased car loadings, avoid severe car shortages and offset retirements.

Knudson says the present need is "very real and pressing" because second quarter steel allotments provide for only enough freight cars to match those being retired from useful service. He indicated that there will be 17,000 fewer cars produced in the first three quarters of 1952 than during the similar period last year.

ATA Fights Six Bills

The ATA is opposed to at least six bills now before Congress which propose change in the Interstate Commerce Act.

These include opposition to selective rate cutting by railroads, federal regulation on motor vehicle sizes and weights, extension of long and short haul provisions to cover motor carriers, stricter limitations on private carrier vehicles, major changes in ICC to give broader powers to its examiners and an act alleged to prevent truck and water competition to rail carriers.

Evans Backs Research

R. B. Evans of Evans Products Co., Plymouth, Mich., has made a $5,000 gift to Wayne University of Detroit to help begin what is considered to be the first Materials Management Research and Training Center in the nation. Added grants of $20,000 are planned by the Evans company.

ASA Fixes Oil Can Sizes

The American Standards Assn. has approved a plan to standardize the diameter and height of 1-quart, 5-quart and 1-gal motor oil cans following requests by oil companies to have interchangeable dimensions.

Truckers Seek Rate Rise

The common carrier branch of the trucking industry has told OPS that it will seek rate increases to help offset increased labor costs. Although OPS does not control freight rates charged by common carriers, it can request ICC or state commissions to forbid applications for authority to effect increases.

DMPA Signs Copper Pact

An agreement that will increase the annual domestic output of copper by 36,000 tons has been put into effect by the Defense Materials Procurement Agency and the White Pine Copper Co. of Ontonagon County, Mich.

The copper company is a subsidiary of the Copper Range Co. and will use the proceeds of a recently granted $57 million RFC loan to develop the ore body for mining and to build necessary facilities to produce the copper.

The agreement is the fifth major step that DMPA has reached with producers to boost production of copper to an annual increase of 145,000 tons.

ICC Warned of Nationalism

ICC has been warned that it must choose between starving the railroads into nationalism or permitting them to charge rates that will provide the kind of service the nation requires.

Harry C. Barron, Chicago, counsel for the western railroads, made the charge as ICC neared the end of its hearings on the request by the nation's railroads for increases in freight rates.

COMING EVENTS

March 21—Material Handling Institute, meeting, Edgewater Beach Hotel, Chicago, Ill.

April 1-4—American Management Assn., 21st National Packaging Exposition, Atlantic City Auditorium, Atlantic City, N. J.

April 6-8—Customer Relations Council of the American Trucking Associations, spring meeting, Shamrock Hotel, Houston, Texas.

April 7-9—National Truck Leasing System, seventh annual meeting, Conrad Hilton Hotel, Chicago, Ill.

May 2-4—Refrigeration Research Foundation, annual meeting, Roosevelt Hotel, New Orleans, La.

May 4-8—The American Warehousemen's Assn., convention, Roosevelt Hotel, New Orleans, La.

May 6-8—Fourth Highway Transportation Congress, Mayflower Hotel, Washington, D. C.

June 23-26—Canadian Warehousemen's Assn., annual convention, Hotel Vancouver, Vancouver, B. C.

June 29-July 2—Material Handling Institute, mid-year industry meeting, Grand Hotel, Mackinac Island, Mich. All materials handling trade associations are invited to attend.

August 12-14—Fourth Western Packaging and Materials Handling Exposition, Los Angeles Shrine Convention Hall, Los Angeles, Calif. All packaging and materials handling industries are invited to attend.

September 18—Material Handling Institute, meeting, Cleveland Hotel, Cleveland, Ohio.

October—New York State Warehousemen's Assn., Inc., annual convention, Whiteface Inn, Whiteface, N. Y.

December 18—Material Handling Institute, meeting, Hotel Statler, New York, N. Y.

Chuting the NEWS *(Continued from Preceding Page)*

The carriers are seeking the full 15 per cent increase requested March 28, 1951. In two subsequent decisions, the Commission authorized smaller increases; about six per cent in the West and South, nine per cent in the East.

Other developments:

1. Western and Southern railroads charged they were entitled to same rate increase as Eastern lines, although they all demand the full 15 per cent increase.

2. Edwin H. Burgess, vice president and general counsel for the Baltimore & Ohio, stated that railroad net earnings are falling although the lines are hauling near-record volumes of freight traffic.

3. William L. Grubbs, spokesman for the Southern railroads, warned that "should the railroads be nationalized, such a fate for their competitors would soon follow and a strong nationalistic trend would be set in motion."

Air Force to Save $700,000

The Air Material Command will save about $700,000 annually in a new reclamation and economy program by conserving two critically needed Air Force supply items.

The items are silica gel, used for corrosion control in packaging supplies for protection against tropic, arctic, or marine climatic exposure, and sulphuric acid, used in all aircraft and vehicular storage batteries and for cleaning metal.

The silica gel will be reactivated through a drying process. The material is porous and in time loses the "thirsty" characteristics which absorb moisture and prevent rust or corrosion in packages. Sulphuric acid will be saved through the reactivation of s i l i c a gel because about one pound of sulphuric acid is required to make three pounds of silica gel.

Long Hauls Increase

The 65th annual report of ICC shows that long distance hauling has increased, due largely to standardized equipment on nearly 800 trailers to facilitate interchange of equipment.

This Baker fork truck is being used by the Cleveland Chain & Mfg. Co. in an unusual way for handling drums. Formed chain is carried in open drums from production machines to the welding department by fork truck. A special attachment has been devised by the company, consisting of a stub fork and a latch to grip the rim of drums. This device makes pallets unnecessary and is easier to use for handling drums than ordinary forks would be.

ICC Lacks Operating Funds

"A strange mis-application of governmental economy" is the ATA Executive Committee's description of the highway safety role and allied functions of the ICC Bureau of Motor Carriers.

The trucking committee has urged Congress to end "hazardous penny-pinching" of the Bureau which has been forced to cut its staff and operations an alleged 48 per cent during the past 10 years.

ATA proposed that Congress allocate to the Bureau of Motor Carriers "sufficient funds to operate with full effectiveness and efficiency."

RR Rate Increase Proposed

A legislative proposal to amend the Interstate Commerce Act to permit railroads to increase their rates quickly after having granted general wage increases has been presented to the Senate.

DTA, ICC Pool Facilities

The joint use of personnel of DTA and ICC, as announced by DTA chief Knudson, is intended to make inland-waterway and port facilities adequate to the needs of national defense.

Free Trial for MH Users

Users of material handling equipment are being offered the chance to field test one of the best-known electric industrial trucks in their own plants without having to buy the equipment.

The offer has been made by Automatic Transportation Co., Chicago, with a three-day free trial plan for its "101" Transporter. The program is designed to let a plant operator see for himself the effect of mechanizing material handling.

John A. Baldinger, general manager of the Automatic Co., stated: "It is a rare chance to experiment with an item of capital goods without having to buy it. This plan lets the user observe how the industrial truck fits into his handling scheme, or suggests improvements that will save him money."

Olin Industries Expand

Olin Industries, Inc., New Haven, Conn., has taken over the assets of Frost Lumber Industries, Inc., Shreveport, La., according to a joint announcement by John M. Olin and Frank T. Whites, the respective presidents. The lumber concern will continue to operate with its present management and personnel.

This new type of mobile conveyor belt, mounted on a jeep, for ground handling of air cargo is in use by United Air Lines. Made by the Cargo Handling Equipment Co., the belt is two ft. wide and has a work surface 20 ft. long. A Vickers hydraulic unit, driven by the jeep engine, operates the belt and conveyor boom. It can carry up to 1000 lbs. in a single item or 2500 lbs. as separate items. The boom rises to 10 ft. 7 inches.

MHI Names '52 Committees

To carry out the most ambitious year of service to American industry ever undertaken by the Material Handling Institute and its 78 member manufacturing companies, L. West Shea, MHI president and manager of material handling sales, The Union Manufacturing Co., Canton, O., has announced the organization of eight committees.

The newly appointed Planning Committee takes on a broader concept in that it will define and evaluate long-term benefits of the Institute's activities. This committee will be directed by W. H. Noelting.

Another new group is the Industry Service Committee under the chairmanship of George R. Brockway, vice-president, Sales and Advertising, The Rapids-Standard Co., Inc., Grand Rapids, Mich. This committee has already launched a program of sponsoring symposiums and conferences, publishing reports and surveys and developing speaker presentations on material handling for significant trade association meetings.

The Exposition Committee will work with the exhibition management firm of Clapp & Poliak to develop an improved 5th National Materials Handling Exposition, scheduled for Philadelphia in May, 1953. This group will be chairmanned by John C. Mevius, sales manager, Materials Handling and Hydraulics Div., American Engineering Co.

Mevius will also head the 1952 Washington Committee which will work closely with the Washington offices of the MHI and NPA on allocation problems.

Two other important committees will coordinate MHI activities with those of the fast-growing technical society of material handling engineers, The American Material Handling Society. M. W. Heinritz, vice president, Gould-National Batteries, Inc., Trenton, N. J., will chairman the group on MHI-AMHS cooperation. H. M. Palmer, general sales manager, Lewis-Shepard Products, Inc., will head a group of industry educational activities, not duplicating those undertaken by The American Material Handling Society.

E. W. Allen, manager of engineering. Edison Storage Battery Div., Thomas A. Edison, Inc., West Orange, N. ., will lead the Finance and Budget Committee. E. J. Byrne, assistant sales manager, Chisholm-Moore Hoist Corp., Tonawanda, N. Y., will captain the Membership Committee.

(Please Turn to Page 42)

MEN
IN THE NEWS

Industrial Traffic Management

Harry A. Fey has been appointed traffic manager of United States Radiator Corp., succeeding **F. J. Armstrong.** Mr. Fey has been with the company for 30 years.

James J. Kane, Jr., has been named traffic manager of the Wallace Barnes Co. division of Associated Spring Corp., Bristol, Conn., succeeding **Peter Beaucar** who has retired after 41 years with the company.

Arthur E. Leitherer has been appointed assistant general traffic manager of Allied Mills, Chicago, succeeding the late **Harold J. Dellert.**

John J. Inch has been appointed to the newly-created position of assistant to the vice-president in charge of distribution for the Scott Paper Co. He will be succeeded by **O. H. Miller** as director of traffic. Mr. Inch began with the company in 1909 and was named traffic manager in 1918. Mr. Miller has been with Scott since 1939.

Henry E. Manker, general traffic manager, Plomb Tool Co., was elected president of the Los Angeles Traffic Managers' Conference at a recent meeting. **L. J. Rewley,** manager traffic and transportation, Lockheed Aircraft Corp. was elected first vice-president; **J. A. Sullivan,** traffic manager, California Hardware Co., second vice-president; and **A. R. Oberlin,** traffic manager, Don Baxter, Inc., secretary-treasurer.

Merrit C. Thiem has been appointed traffic counsel and assistant to the secretary of the Fibre Box Assn. and National Paperboard Assn. **D. E. Thomas,** has been appointed assistant traffic counsel for the two associations. Mr. Thomas is formerly assistant traffic manager of Campbell Soup Co., Chicago district.

L. W. Troutfetter has been named general traffic manager of the Kellogg Co., Battle Creek, Mich. **A. H. Erb** is the new traffic manager at the company's Battle Creek plant.

Materials Handling

John A. Borman has been appointed chief engineer of the Baker-Raulang Co., makers of materials handling equipment. Mr. Borman joined the company in 1950, advancing to chief mechanical engineer.

Robert C. Brady has joined the W. B. McClelland Co., a materials handling equipment sales organiza-

(Please Turn to Page 53)

ALONG THE WAY... OF TWA

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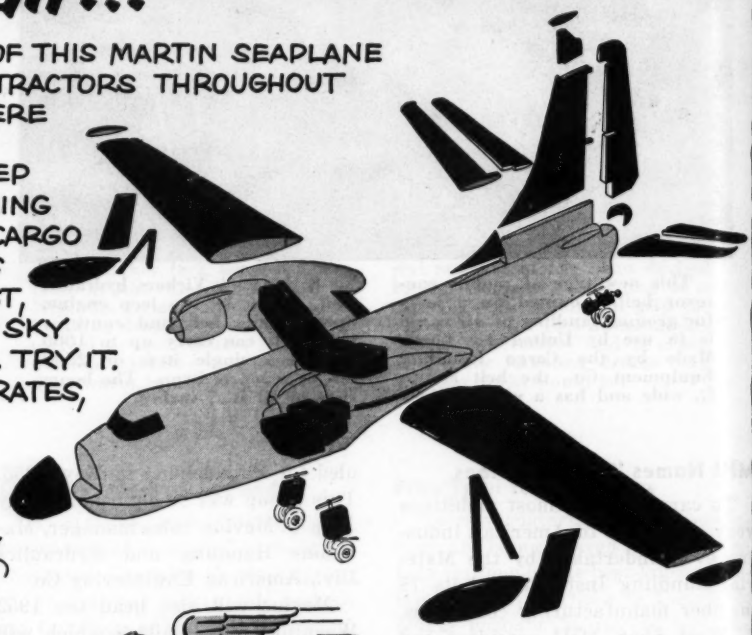

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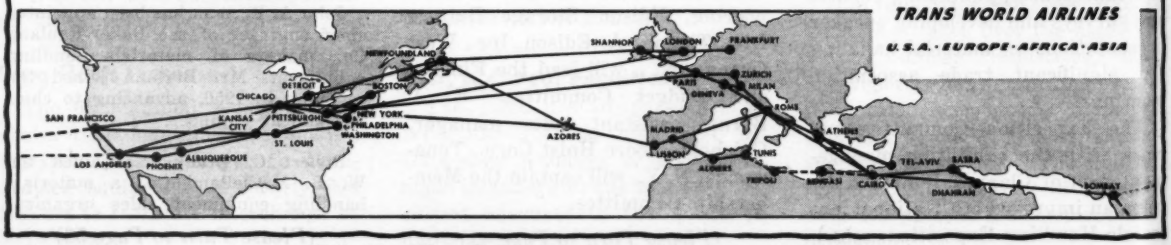

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Washington DA

By Karl Rannells, *Washington News Bureau*

Defense Needs Are Obscure

It will still be some weeks before manufacturers of materials handling and related distribution equipment will begin to get a clearer idea of what the armed services want from them in the way of production for fiscal 1953. Usually, a general peek at estimated needs is given in the budget estimates. A more detailed outline is then given when the services go before the appropriation committee of the Congress to justify their estimates.

Intentionally or otherwise, this year's 1222-page budget sheds little light on the matter. Materials handling needs are obscured by being lumped into general classifications; which include construction and road-building equipment, highway and railway rolling stock, tugboats, and other "major procurement."

Defense production officials have been given a look. But, understandably, they're not talking. Present plans are to start military appropriations hearings early this year, probably in early March. Details may become clearer at that time.

Air Freight Cutting In

Reports being received here indicate that more and more parcels of the lighter and smaller types are shifting over to air transport. It is too soon to tell whether this is a permanent trend or what the reasons might be. But some think it can be attributed to (a) the new restrictions on size and weight of parcel post, (b) better merchandising of services by the airlines, and (c) increasing Railway Express Agency rates—in that order.

Production Outlook

Prospects in mid-February were that the materials handling industry would receive controlled materials during the second quater at about first quarter levels. Roughly, this is about 60 per cent of estimated requirements. This is figured on an industry-wide basis. Actual allotments to individual manufacturing firms depend on several factors, primarily on relative importance of their products to the defense program.

Steel is easing. National Production Authority is not having too much trouble allocating aluminum to the materials handling industry. But copper is still a big headache and chances of the supply easing in the near future is slight.

On the other hand, chances are good that whatever allocations are received, manufacturers will get their CMP tickets cashed. Current policy is to require mills to accept orders in excess of estimated production and to fill them in order of receipt the next month. The NPA is also keeping close check on order boards and helping place orders.

AF Standardizes MH Equipment

The Air Force has begun a program of cleaning up its inventory of materials handling equipment with two main thoughts in mind. One is to get rid of obsolete and unusable equipment. The other idea is to reduce the number of items in its catalog of approved equipment.

Officials say that their present goal is to cut the number of different models or kinds of materials handling equipment from the present 300 to not more than about 70. This, in turn, would naturally reduce the size of the spare parts inventory. It would also streamline and speed up repair and maintenance. Officials figure annual savings in procurement and manpower through the program at $15,000,000.

Transportation Cutbacks

Military requirements are knocking the props from beneath first-half production programs in the transportation equipment industries. Cutbacks in materials were applied across-the-board and will reduce second quarter production considerably below first quarter levels. As of late February, the outlook for April, May and June was about as follows:

Trucks—about 75,000 new vehicles a month of which only about 31,500 would be of the medium and heavy commercial types; truck-trailers—about 4800 a month, not counting those to be built for the armed services or export; and, freight cars—about 5000 a month, which amounts to only about 31,500 would be of the medium and heavy commercial types; truck-trailers—about 4800 a month, not counting those to be built for the armed services or export; and, freight cars—about 5000 a month, which amounts to only about 1000 more than are worn-out and taken out of service each month.

'Copter Program Under Way

The Army Transportation Corps has entered a new phase of its program looking to the speeding up of deliveries and handling of supplies. January saw the delivery of the first of 97 cargo helicopters which the TC has ordered from United Aircraft's Sikorsky division, all to be delivered this year. They will be assigned to the newly set up Helicopter Transport Companies.

Known officially as the H-19, the single rotor 'copter is rated as able to carry one ton of cargo in addition to its crew of two. Its primary use is for front line distribution of ammunition, food and other supplies. But, in cases of emergency, it can also be used to transport batches of 10 men for combat or bring out eight litter cases.

(*Please Turn to Page* 64)

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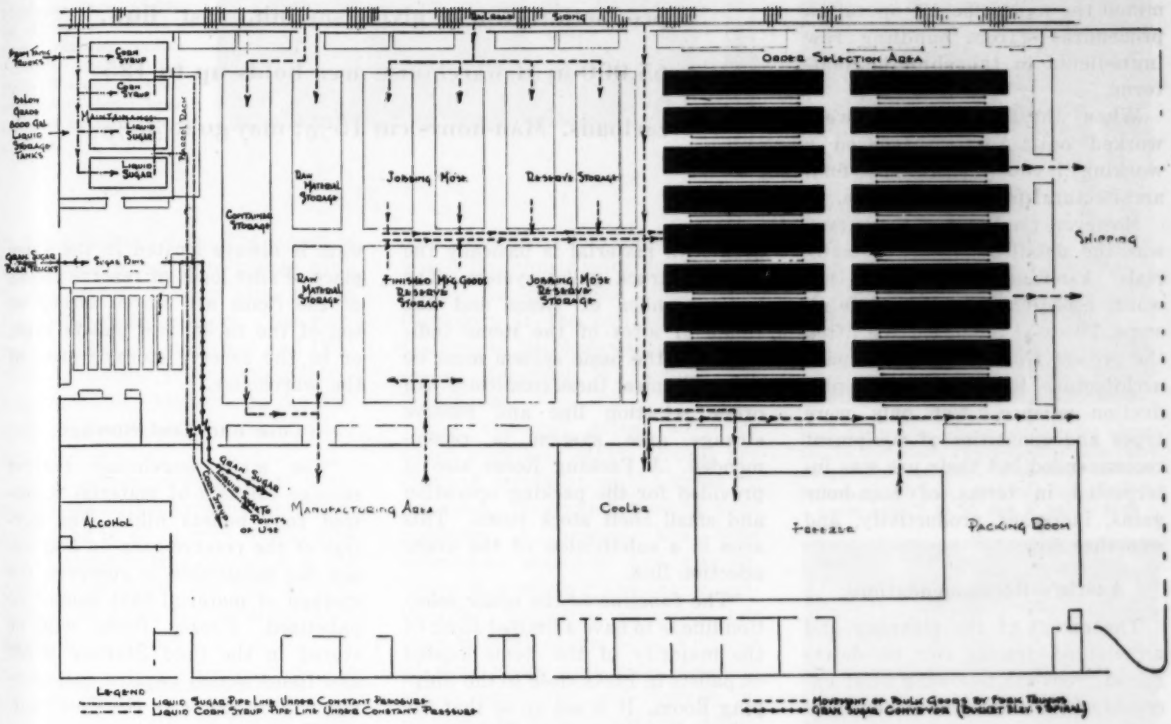
FEATURE ARTICLE



Simplified floor plan of H. A. Johnson's first floor shows movement of final production processes in relation to receiving, order filling, storage and shipping. Courtesy, The Austin Co.

PLANT DESIGN

Integrates Materials Handling

BENEFITS of integrating materials handling equipment in the design and construction of a food manufacturing plant is excellently exemplified in the new building erected by H. A. Johnson Co. in the Brighton District of Boston.

Not only are the very latest time-and-labor-saving devices and facilities to be found in every department but, also, the functions of all equipment are being utilized to their fullest extent. For example, there are no elevators in this building—all lifting between the first and second floors is handled by fork-lift trucks. Moreover, the doors providing access to the second floor are equipped with photo-electric cells. These automatically raise the doors when a lift truck approaches them on the floor below, and close them automatically when the truck leaves.

Planned Efficiency

The high efficiency to be found in this new plant is the product of coordination of ideas and requirements of Johnson's Building Committee with the engineering skill of the designers and builders. The

. . . Integrates Materials Handling

(*Continued from Preceding Page*)

Materials handling equipment, designed into production lines, gives smooth, fast flow. 65,000-sq ft warehouse area holds up to 125 carloads. Man-hours cut 15%; may go to 25%

first step was an engineering survey by The Austin Co. that determined the most efficient operation procedures — from handling raw ingredients to the shipping platform.

When these procedures were worked out, Austin prepared a working layout before the final architectural plans were drawn.

However, the heart of the survey was the detailed outline of materials handling equipment that would coordinate and integrate all steps. This was the phase that lifted the project from the realm of pure architecture to business and production science. Not only were types and quantities of equipment recommended but their use was interpreted in terms of man-hour gains, increased productivity, and smoother flow.

Austin's Recommendations

The extent of the planning and anticipated results can be determined from the following brief excerpts of the engineers' conclusions and recommendations.

"The recommended system of operating the warehouse and supplying the second floor manufacturing area with material is basically the fork-lift truck pallet system. The large number of items and the range of sizes of the items indicate that the basic system must be refined to meet these conditions. An order selection line and reserve storage area system is recommended. A Packing Room also is provided for the packing operation and small shelf stock items. This area is a subdivision of the order selection line.

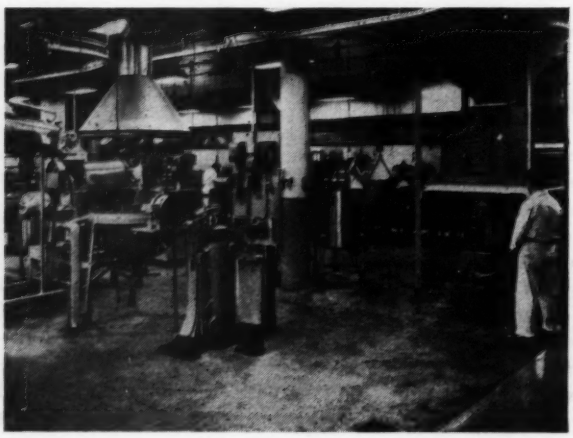
"The function of the order selection line is to have a limited stock of the majority of the items located on pallets in racks close to the Shipping Room. It is set up so that the order selector can pass all the items that he has to pick in the shortest route possible. It enables him to locate quickly any item because the item is always located in the same place. Pallet loads of reserve stocks of the items are stored either on top of the racks, two pallets high, or in the reserve storage area of the warehouse.

Cold and Cool Storage

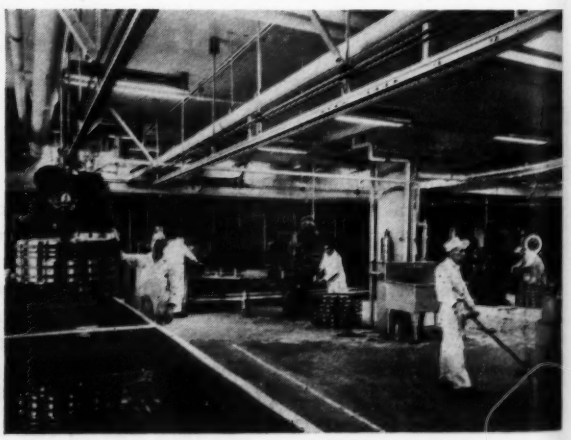
"The main warehouse reserve storage consists of material palletized four pallets high. The portion of the reserve area on and under the mezzanine is reserved for storage of material that cannot be palletized. Frozen foods will be stored in the Cold Storage Room and items which require cool storage will be stored in the Cool Storage Room.

"The layout developed has been planned to provide storage space for the quantities of material shown

Sugar is handled automatically to distribution hopper, right



Canning lines, background, feed to the cooling tank, at left



High-lift forks are a factor in storing up to 125 carloads of food products in a 65,000-sq ft area. Truck's short turning radius permits use of 8-ft aisles. Warehouse man-man-hours have been reduced by 15 per cent

in the tabulated data. The layout is based on storing four pallets high in the reserve storage area and in the order picking racks. The tiering of pallets in the Cool and Cold Storage Rooms is limited to storing two pallets high due to the limitations imposed by the ceiling height.

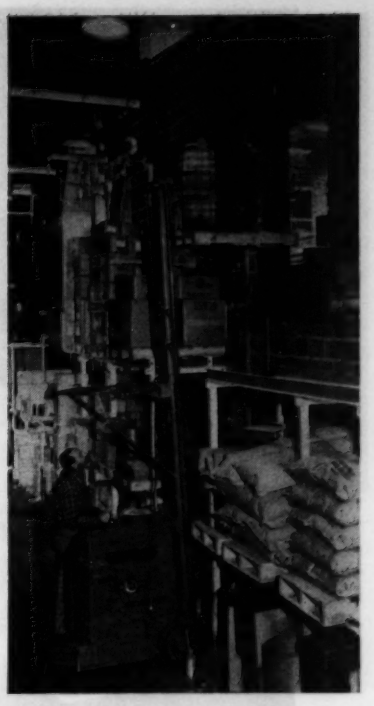
"The personnel required to operate the materials handling system is estimated to be 31 men. As 52 men are engaged in this operation in the present buildings, the new method should cut down the required labor force by 21 men."

Other Recommendations

Subjects covered in the 60 pages of the recommendations included: Methods and Procedure; Existing Facilities and Operating Procedure; New Facilities; Recommended Materials Handling System for the new plant; Recommended Operational Procedure in the new warehouse; Equipment Recommendations; Personnel Required to Operate the Warehouse.

The expected gains, some of which were long range, already are showing dividends on the great investment. Production flow of food products in process has been stepped-up smoothly and quickly. There is a marked absence of bottlenecks. Employee efficiency has been boosted appreciably. Full use of floor space and cubic capacity utilize productive and storage capacities to fullest extent. Added loading and unloading facilities have speeded platform handling.

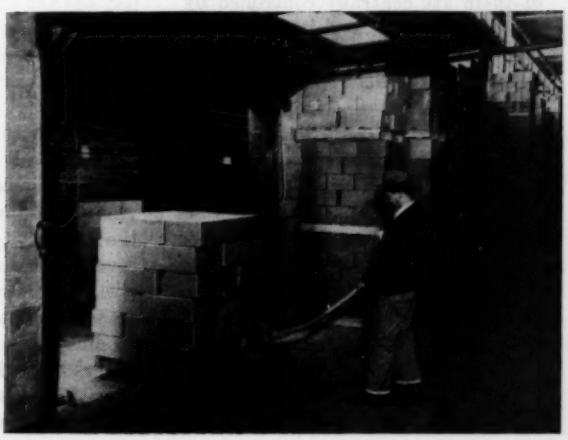
(*Please Turn to Page* 38)



Fork-lift trucks, above, double for elevators in this plant. Photo-electric cells raise doors automatically. Sub-zero freezer, below, holds 20 carloads in 60x90-ft, room kept 5 to 10 deg F below zero

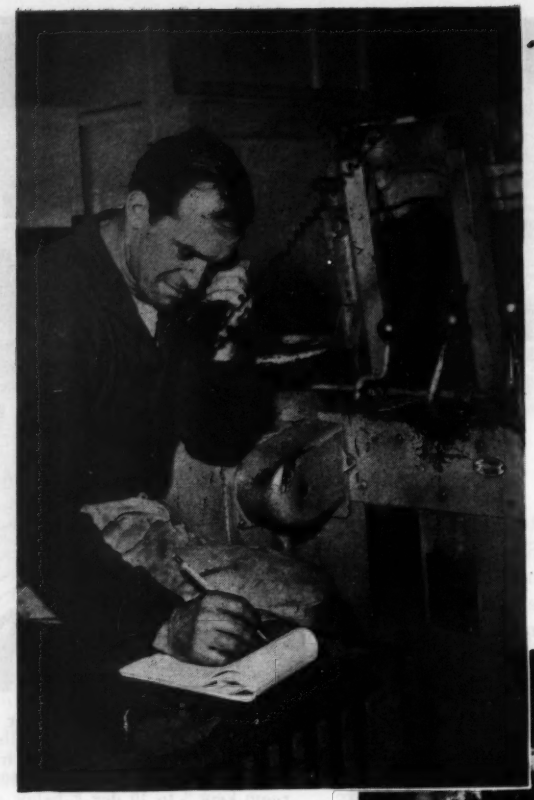
Mechanized handling cuts man-hours 15%; 10% more is expected

Five box cars can be unloaded simultaneously along this aisle



Pratt & Whitney

REMOTE C



Trucker stops to answer 'phone signal for orders

Pratt & Whitney's private telephone truck call system has cut bottlenecks

TO KEEP material moving in pace with production, Pratt & Whitney Aircraft operates a large fleet of industrial trucks in its 50-acre engine plant at East Hartford. A few of these are assigned permanently to certain departments—such as experimental assembly and test, and to plant maintenance—but the larger share of them are centrally controlled by Inside Trucking, a unit of Department 50.

In 1947, the fleet consisted of 13 fork-lift trucks and nine low-lift platform trucks. At that time, 17 trucks were assigned to specific departments or areas; five were rovers.

As the pace of production quickened, it became evident that this arrangement was unsatisfactory. In some areas, trucks were unable to keep up with the work-load; in others, the trucks were running only 50 to 75 per cent of the time. The answer seemed to lie not in merely adding more trucks to the fleet but in making the existing fleet more efficient.

We evaluated the performance of the truckers, and found that the rovers were clearly more productive. So our first thought was to make all the trucks rovers. But our studies also had shown that the rovers were doing a lot of unnecessary backtracking. Operators of the trucks got their assignments from the central dispatch office but, when they finished a job, they had to return to the office to get the next assignment. These return trips represented a great deal of non-productive mileage.

Try Telephone Dispatching

To cut down this wasted travel, we first tried a simple telephone dispatching system. Instead of bringing his truck back to the Inside

Dispatches Trucks by

CONTROL

Switchboard and plant map is system's nerve center

300 per cent increase in materials handling is gained by use of special plant telephone network for dispatcher and two clerks

By Herve A. J. Lessard *Supervisor of Intra-Plant Materials Movement*
Pratt & Whitney Aircraft Division, United Aircraft Corp., East Hartford, Conn.

Trucking office, the operator of a rover was instructed to call in from the nearest telephone, to get his next assignment.

This worked out so well in giving a more equal distribution of work that we converted more trucks to rovers. But the truckers still had to do a lot of walking to reach the nearest telephone—an average distance of at least 100 ft. The workload was still mounting. To get the utmost use of our trucks we needed something to cut down that off-truck time.

So, with the telephone company, we worked out a special telephone network, independent of the rest of the plant telephone system. This was placed in operation in August, 1948. It consists of a central switchboard and 21 call stations at key points in the plant—about 300 ft apart.

Call stations are located on the aisles. They are high on the wall, so the driver doesn't have to get off his truck to use the 'phone. In addition, blue lights are located at each station. They are flashed by the dispatcher when he wants to reach a driver.

Staff Consulted on Stations

We insured the co-operation of all concerned by asking the drivers and certain key people to recommend the best locations for the call stations. It is interesting to note that they were unanimous on 19 of the 21 locations we adopted.

At the start of a shift, all trucks fan out through the plant. Then the dispatcher takes over, and all truckers must keep in contact with him. They are free to pick up any material in outgoing areas, provided they inform the dispatcher. This avoids duplication.

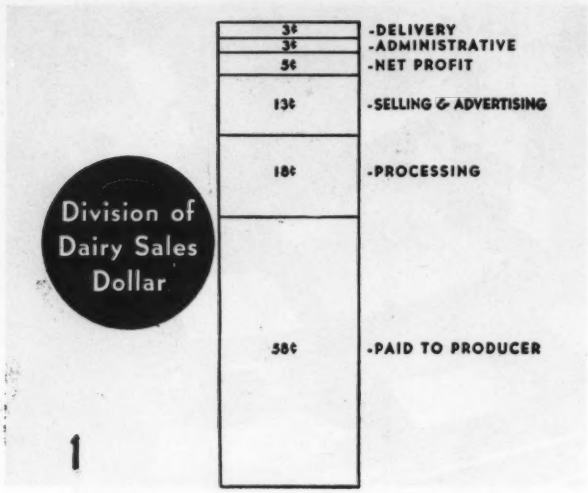
Meanwhile, requests for trucking service come in from various departments of the plant, over the regular shop telephone system, to the central office of Inside Trucking. Two clerks write up job tickets, noting the time received, the name of the person calling, the department, and the nature of the particular job to be done. These tickets are then handed to the dispatcher. He sorts them by area and type of truck required.

For urgent jobs, he throws a switch lighting the blue lamp at the call station (or stations) nearest the load to be picked up. For a particular job, the dispatcher may light the lamps at three or four call stations. The first driver who sees a light lit answers the 'phone and gets his instructions on the run.

For normal routine work, the dispatcher waits until a free driver calls in from a station near the department requesting service, and then gives him the job instructions.

To keep track of the trucks, the dispatcher moves pegs on a map of the plant whenever he assigns jobs or truckers advise him that they

(*Please Turn to Page* 52)



Survey Shows How to Cut

DELIVERY COSTS

GMC Transportation Survey discloses that transportation is one of the last big areas in which management can make substantial economies

MANY of your plants could stand as models of the most advanced assembly line technique. Your management shows justifiable pride in pointing out examples of the most modern money-saving processing equipment. Particularly striking to us, who are associated with the auto industry, was an account of one operation in which cases were touched by hand only twice in the entire line of flow.

In the sphere of sales management you have displayed equal resourcefulness.

Transportation's Problems

In the field of transportation management, however, we did not find the same degree of imagination and resourcefulness, nor the same analysis and control which exist elsewhere in your business.

By W. L. VandeWater

Merchandising Manager, GMC Truck & Coach Division, Pontiac, Mich.

Briefly we found:

No instance of delivery costs on a route basis.

Several instances of failure to cost each individual vehicle.

Rivalry between Sales and Transportation which worked to the disadvantage of both.

Frequent subordination of delivery considerations to sales considerations, with inadequate knowledge of the cost factors involved.

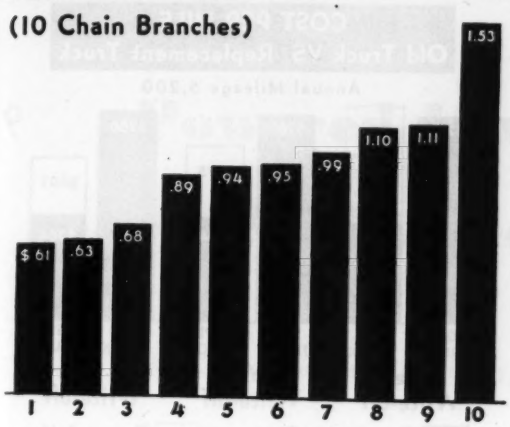
Instances in which vehicle maintenance, and even decisions as to vehicle replacement were influenced to an undue degree by Sales.

All of this is perhaps not the unnatural result of the driver-salesman set up, which ties together sales costs and problems with delivery costs and problems.

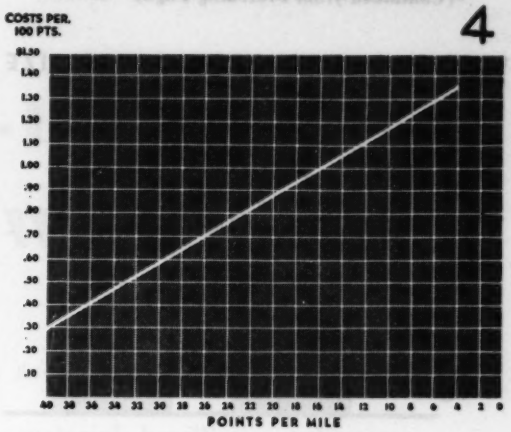
The question of unprofitable retail routes seems to us to be one of degree—management knows that some routes are doing better than others, but just how badly off the sick routes really are is not generally known. We've had sales managers tell us, "Of course we know we have a couple of routes that aren't making much money—maybe even losing a little—but what good would cost figures do us? After all, we aren't going to drop the routes."

Perhaps not, but we believe that after seeing some of the figures you will agree that some form of action is called for. Possibly a shortening of the route, a partial merging with

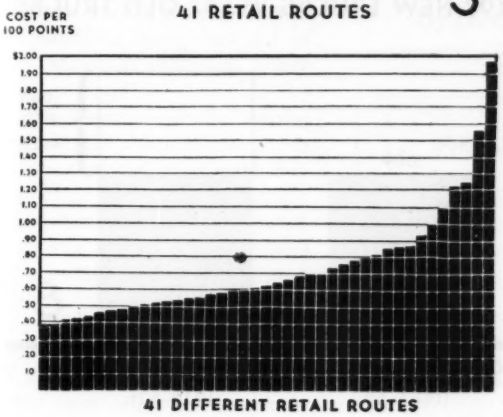
RETAIL DELIVERY COSTS PER 100 POINTS
(10 Chain Branches) 3



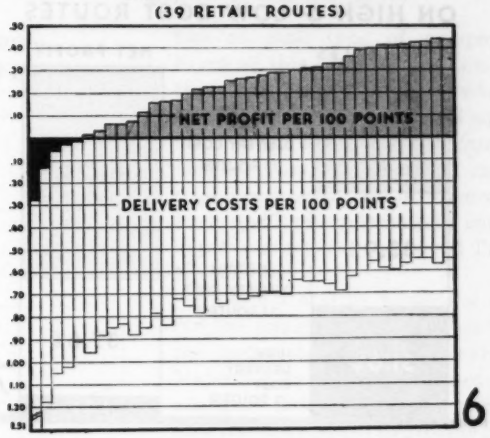
RETAIL DELIVERY COSTS AND CUSTOMER DENSITY 4



DELIVERY COSTS PER 100 POINTS 5
41 RETAIL ROUTES



DELIVERY COSTS & NET PROFIT PER 100 POINTS
(39 RETAIL ROUTES)



6

other routes, the addition of a few wholesale stops, or greatly intensified sales efforts.

Two Major Questions

The whole subject of delivery costs raises two questions:

1. How important are delivery costs in relation to the rest of your business?

2. Is it possible to make significant savings in delivery costs?

To put question one into perspective, let's look at your sales dollar in terms of the control you have over its disbursement—the opportunities you have for savings.

Chart 1 shows what becomes of the sales dollar in one of the dairies we studied. Your own figures are probably not very different. The price you pay to producers, 58 per cent of sales for this dairy, is directly or indirectly set by the various market adminjstrators, and offers no opportunity for economy.

If, like most dairies, you already have modern processing equipment and methods, there is little possibility of a material reduction in your plant expense, particularly in the face of upward pressures on wages, and the costs of supplies and equipment. So here is another 18 cents out of your dollar that most of you probably can't do much about.

For the majority of you, then, the costs over which you have the greatest control are those shown at the top of this chart—Sales, Administration, and Delivery.

NEXT MONTH:

. . . Another detailed article on this important subject—but in another industry

Delivery Cost Really 16%

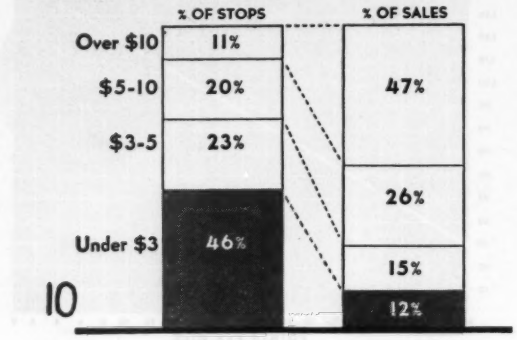
Here's how these controllable costs split up: Delivery expense, shown at the top of Chart 2, has grown from 3 per cent of your sales dollar (Chart 1) to 16 per cent of your controllable costs. Does it look any different to you in this way—does it take on a new importance?

It's our contention that this 16 per cent offers a virtually untapped opportunity for cost savings. Are you satisfied that this element of your costs is properly controlled? Have you made the operation analysis and time studies that characterize the planning of your plant operation? Are you satisfied that each of your vehicles is earning its

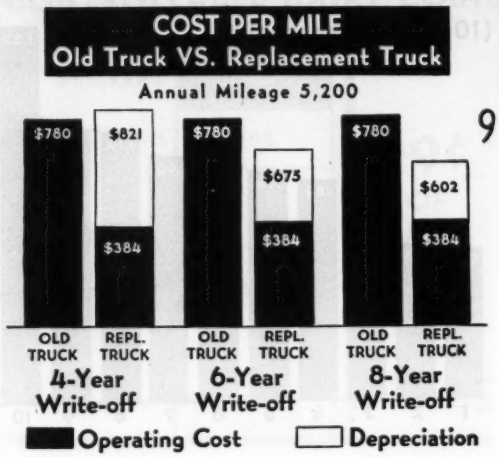
. . . DELIVERY COSTS

(Continued from Preceding Page)

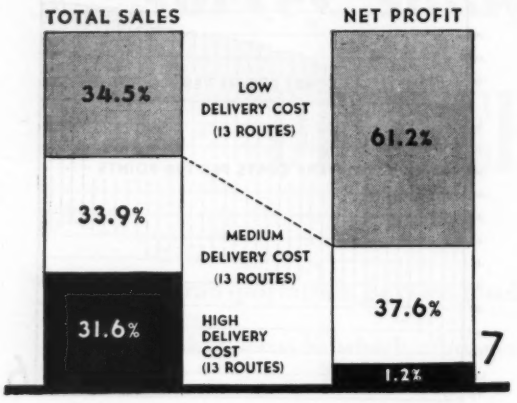
WHOLESALE STOPS BY ORDER SIZE



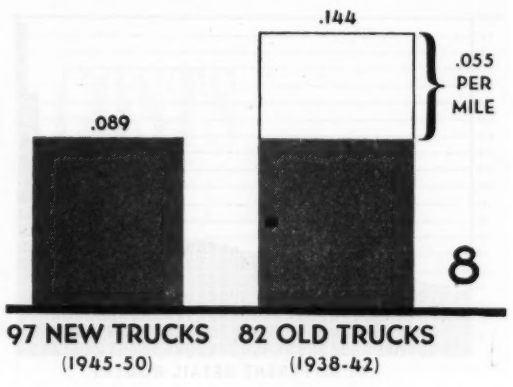
DOES YOUR DEPRECIATION POLICY DELAY NEEDED VEHICLE REPLACEMENT?



TOTAL SALES & NET PROFIT ON HIGH & LOW COST ROUTES



OPERATING COSTS PER MILE (97 NEW TRUCKS VS. 82 OLD TRUCKS)



keep, that each of your routes has delivery costs which are in line?

Look at Gasoline Cost

What can you do about it? How can these costs be controlled? As an illustration, let's look at one item—gasoline.

In one multi-branch operation we compared gasoline costs per mile at the highest-cost branch with gasoline costs at an average branch. We found a difference of $.023 per mile —from $.037 for the average branch to $.060 for the high-cost branch. The trucks in this comparison are all of the same make and model, of about the same age, and rolled up comparable annual mileage.

The difference in gasoline costs, then, must be largely due to differences in the condition of the vehicles—resulting from maintenance practices. Or perhaps these cost differences are due in part to differences in driver training.

Suppose that through efficient maintenance and driver training, gasoline costs at the high-cost branch had been kept at the level of the average branch. For the entire fleet of 19 vehicles, this would have resulted in an annual saving of $1,400. For this branch, such a saving would equal the net profit on three retail routes.

Compare Branch Costs

Shown on Chart 3 are retail delivery costs per 100 points* at each of the 10 branches of a multi-branch operation. Common accounting practices at all branches insure uniformity of the figures. Note the range—from 61 cents per 100 points to $1.53 per 100 points.

Now, it is obvious that this does not mean that the delivery operation at Branch No. 1 is almost three times as efficient as at Branch No. 10. But is Branch No. 1 any more efficient? How can the costs of the high-cost branches be lowered? What are the reasons for these wide differences, and what can be done about them? These are the questions which management wants answered.

After analysis, we found that the principal reason for these differences in retail delivery costs was in the concentration of the market, that is, in the number of points per mile run. Chart 4 shows this relationship.

(Please Turn to Page 40)

* A "point" in dairy parlance is the sales value equivalent of one quart of milk.

Powered Low-Lift Trucks Are Profitable Work Horses

Use of gasoline or electric types, according to conditions, not only cuts worker fatigue, but reduces materials handling man-hours

By D. O. Haynes
Consulting Industrial Engineer

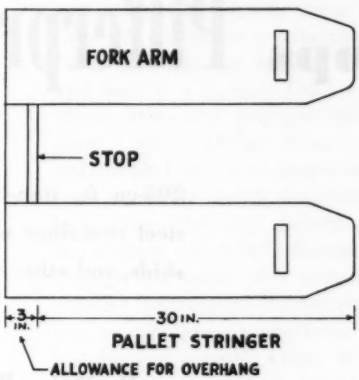
THE first step in taking materials handling equipment out of the manually-operated class was to accomplish elevation by means of an electric motor, driven by line current. Improvement in the mobility of the equipment had to wait until the storage battery had been developed to the point where it was sufficiently light and powerful to be carried on the machine itself.

Date of Origin

This stage was reached by 1927, when the first true fork truck is reputed to have made its appearance. Thus, from its beginning this machine has been motorized.

Surprisingly enough, not until 1936 did low-lift machines for handling skids and pallets join the ranks of industrial power trucks. It was Irving I. Schreck who first added to a skid truck a motor, the necessary drive mechanism, and a battery, producing the first of the so-called "walkies." Later, the foot-pedal, hydraulic lifting arrangement gave way to a motor-actuated elevating mechanism, and the once lowly "jack" became completely powered.

The operating principles of these improved models are essentially the same as those of the hand types (see *DA* for January, 1951, P. 22.) with, of course, the difference that movement and elevation are accomplished by battery-powered electric motors.



Loads extending beyond edge of pallet may prevent insertion of forks far enough into pallet to permit roller contact with floor. One solution is welding cross bar between the forks

Gasoline-Powered Types

But electricity is not the only source of power used in these machines. Low-lift trucks are also gasoline-powered. Indeed, one of the first questions a prospective user of mobile materials handling equipment must answer is whether he requires electrically or gasoline-driven models.

The question of gasoline versus electricity is one which has been a perennial controversy in the materials handling field. Indications are that it will be solved generally by a realization of the particular qualities of each type of equipment. Signs of this are found in the fact that many manufacturers who at first produced only electrical equipment now are offering gasoline models. Also the Electrical Industrial Truck Assn. has broadened its scope and its membership by changing its name to the Industrial Truck Association.

This is a healthy move, not only for the concerns involved, but also for materials handling generally. Materials handling is one of our youngest industries, and sufficient time has not elapsed to provide good case histories and well authenticated cost figures for answering questions concerning relative expense of maintenance, and the operation, length of life, etc., of these two kinds of equipment. It is to be hoped that now that the two groups producing this equipment are working together, careful research will shed light on the whole subject.

Relative Merits

In general, two machines of equal capacities, one electrically and one gasoline driven, have these advantages and disadvantages: The gasoline-powered machine is lighter in weight, more maneuverable, faster, and is a better performer on ramps. But there can be no question that the electric model is quieter and cleaner.

The first cost of the gasoline model is certainly less than its elec-

(*Please Turn to Page* 44)

Shown below is the army's pilferproof shipping container for valuables. It is estimated that it will effect considerable savings for export packing, damage claims and pilferage. It can be handled with a forklift truck, as at right, or with a crane or hoist. Its corners are notched for stacking

Army Develops Pilferproof Package

295-cu ft, non-collapsible, corrugated steel container with combination lock, skids, and other features, gets army OK

By Major Walter E. Keenan
Transporter Control Officer, Far East Command

A NEW step has been taken recently in the Army's never ending program of reducing shipping costs, losses and damages. A standard transporter, or shipping container, has successfully passed exhaustive tests in shipping highly pilferable, sensitive and high-priority cargo in the theater of operations.

Expect Large Savings

The idea of a reusable shipping container is not new, but its use under these circumstances is decidedly novel. The advent of this old-type container for a new-type service will effect large savings to the government by a reduction in costs for export packing, damage claims and pilferage.

The original transporter, similar to that used by commercial carriers, was developed by the Army primarily as a shipping container for household goods.

In the conduct of this investigation by The Transportation Corps Test Board, Fort Eustis, Va., the containers were loaded at a United States port of embarkation and shipped to overseas destinations, with provisions for recording advantages and disadvantages noted enroute. Data thus acquired were used in comparison of this medium of shipment with others formerly or currently employed, as well as in the redesign of the transporters.

The final analysis of these data indicated that by the elimination of multiple handling of individual items, a saving of approximately 53 per cent of the man-hours normally required for conventional handling of household goods could be effected.

Capacity Is 295 Cu Ft

The transporter, as finally designed and recommended for use, is illustrated herewith. It is a non-collapsible steel container with a capacity of 295 cu ft, measures 8 ft 6 in. in length, 8 ft 3 in. in width and 6 ft and 10 in. in height. It weighs 1325 lb.

For durability, as well as low weight, the rear and side panels are of currugated steel and the roof and floors are of sheet and corrugated steel. The corrugated steel doors are of a double-swinging type with flat back hinges on non-removable pins.

To facilitate handling by field expedients, as well as by fork-lift truck or crane, the design includes skids of continuous steel I-beams along the bottom of each side, and fixed eyes at each top corner. Recesses for skids in the roof edge of each transporter allow stacking.

Has Combination Lock

In the recent test, it was found that use of a simple combination lock on these transporters, was a satisfactory arrangement.

It must be remembered that the problem here is not one providing a safe or strong box, but of making casual access enroute reasonably difficult.

Early in 1951, these transporters became available in reasonable numbers for practical test in the movement of combat essential and morale items in the Korean operation. These items, of high priority and of a pilferable nature, included medical supplies, ordnance and signal spare parts, clothing, mail, and post exchange supplies.

After loading at the depot or supply point, in either Japan or the rear areas in Korea, the transporter was moved by rail to the station nearest its destination. There, it usually was emptied by the consignee; although, often, he elected to skid it on to a truck and take it to its depot as one package. Even at the more advanced delivery points, a considerable portion of these containers picked up return loads—sub-assemblies for rebuild, repairable parts and other miscellaneous but valuable property.

The greatest volume of morale cargo transported was parcel post. Formerly, this type of mail was subject to pilferage and damage through water seepage, since it was, to a great extent, exposed to much handling and to other than ideal distribution conditions.

Results Exceed Expectations

The results of this test have exceeded expectations. There have been many favorable comments by those individuals on whom rests the burden and responsibility of safety delivery. There has been a marked decrease in the loss by damage or pilferage of critical and sensitive items. ●

Sales Keep Rolling Along

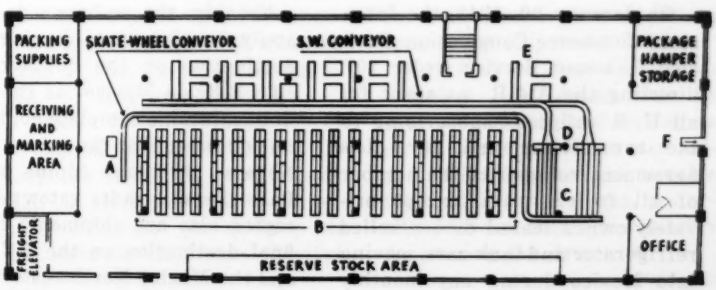
Here is how a large mail order firm uses a conveyor system to keep its orders, and profits, on the move

CONDUCTING a mail order business of between 1500 and 2000 orders a day in certain seasons presents quite a handling problem. The William Filene Sons Co. of Boston, whose inventory broken down in sizes and colors well exceeds 5000 individual units, handled this handling problem by making Market Forge Conveyors the basis of their system. This illustration of the flow chart will help explain how this system works.

As customer orders come in, they are typed on a salescheck form in a central typing office and sent to a Control Desk (A) where they are scanned by a clerk. Merchandise bins (B) are divided into five major sections, each one being designated by a color. The clerk determines the sections which have merchandise on the order, and attaches colored clothespins, corresponding to the proper sections, to a tote box which, along with the order, is pushed along a skate-wheel conveyor running by the bins. Order-filling clerks at the various bins, when they see a box which has clothespins corresponding to the color of their bins, remove the box from the conveyor, fill it with the proper items, remove the colored clothespin, and push the box on its way along the conveyor. The box is successively picked off by order fillers at other stations.

The filled order reaches the inspection area (C) where it is checked for price and correct type of merchandise. It is then moved to the cashiering section (D) where the correct amount of the sale is rung up. The cashiers push the boxes down inclined conveyors to the packing line (E) where, after being packed, they are temporarily stored on rolling hamper trucks. Three or four times a day the hampers are unloaded onto a belt conveyor (F) which carries them to the shipping room where they are sorted for delivery.

The net result of this installation has been a faster turnover of orders, a considerable increase in output per man hour, and generally, an efficient and economical method for handling this high volume of business. ●



MISSING...

. . . 5000 Freight Cars!

If you're shipping south of the border, here are some vital facts that may save you time and money

By Charles W. Haggendorn
Assistant Traffic Manager
Combustion Engineering-Superheater, Inc.

WHILE most North Americans have some knowledge of the ancient mysteries of our good neighbor south of the border, just how many are acquainted with the outstanding transportation puzzle of modern Mexico?

Here is a problem that has really stumped the experts! What has happened to more than 5,000 United States owned railroad cars that were recently said to be still beyond the Rio Grande boundary? This figure does not include tank and refrigerator cars.

In the face of a critical car shortage in this country and in spite of every effort on the part of American railroad officials, the Association of American Railroads, and others, it just does not seem possible to get back into the United States any substantial portion of this sorely-needed equipment.

Peak Exceeded 10,000

The non-return of railroad equipment reached its almost unbelievable peak a while back when at one time there were said to be more than 10,000 U. S. owned and leased cars in Mexico.

On January 30, 1943, the Interstate Commerce Commission, Division 3, issued Service Order 107, directing the A.A.R., as agent for all U. S. railroads subscribing to the car service and *per diem* agreement, to restrict the number of all freight cars, except privately-owned leased or controlled refrigerator and tank cars, moving into Mexico during any monthly period, so as not to exceed the number of cars coming here from Mexico during the previous month. This S. O. was suspended February 26, 1944. Revised S. O. No. 107 became effective January 1, 1945, and expired July 2, 1949.

In compliance with the Commission's order, the A.A.R. issued its Car Service Division Embargo No. 400. This embargo has been in continuous effect for the past seven years, and is probably the longest uninterrupted embargo ever continuously in force.

Currently, the embargo applies to all carload freight, except tank cars, when intended for Mexico or beyond and routed on or via National Railways of Mexico.

Embargo Makes Exceptions

Notably, the embargo does not apply to shipments having final destination on the Southern Pacific R.R. de Mexico, as the U. S. line maintains complete control of its equipment for the return move. Nogales, Arizona; Alpine and El Paso, Texas, are its gateways. Excepted also are shipments having final destination on the KC M&O and the Mexico Northwestern R.R.

The N de M handles shipments beyond Brownsville, Laredo, Eagle Pass and El Paso.

The term carload shipment as used in the embargo means:

(a) Any shipment moving at the carload rate.

(b) Any shipment or shipments from one shipper to one consignee aggregating 20,000 lbs. or more.

(c) Any such movement occupying a car to the exclusion of other freight.

(d) Empty freight cars on revenue billing except empty tank cars moving without charges.

An exporter will be wise to file an application for a permit against this embargo well in advance of actual shipment, as issuance currently takes up to several months, depending on final use of commodity. Vital and urgently needed items receive preference.

Application for permit must be made in writing in duplicate, addressed to Mr. E. F. Bilo, Manager, Car Service Division, Transportation Bldg., Washington, D. C.

After approval, a permit indicating number and expiration date is issued and notification sent to the originating carrier, with copy

to the party making application. The permit number must be shown on the bill of lading and freight waybill.

To protect himself against possible heavy demurrage charges, the carload shipper should not load a car until the A.A.R. permit has been issued. Pending issuance, which may be remote, what alternatives has he?

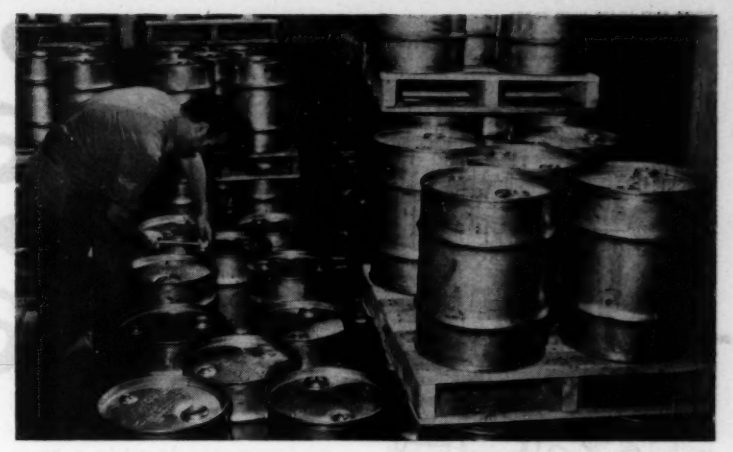
He can ship by truck to the border if his commodity lends itself to motor carrier movement. Or he can still route by rail, indicating on the bill of lading that shipment is to be unloaded at the border and is to be reforwarded by truck beyond. In the latter instance, the consignment to the border will take the domestic rail rate. This may be considerably higher than the export rate applying from certain origins when intended for certain destinations in Mexico.

The exporter can, of course, ship his material to a U. S. seaport for steamer movement to Mexico, thence via rail or motor carrier beyond. The added expense in the latter instance for export packing must be considered, as the other routes require only domestic packing. In any event, steamer shipment should be explored for possible lower overall transportation costs.

As a last resort, the shipper can break down his consignment into less than carload lots, which obviously is uneconomical.

It is generally felt that the National Railways of Mexico does not own sufficient freight cars to accommodate its local needs and may be detaining U. S. equipment for local use longer than is thought justified.

What then are the prospects for the future? The National Railways of Mexico is making a determined effort to increase its own car pool, and we would ordinarily expect a decided improvement in due time. However, this is offset by the fact that Mexico's economy is progressive and expanding. It is developing its own resources and its trade is growing. It therefore has an increasing need of still more rail equipment. ●



Drum Up Those Stainless Steel Drums

These containers are scarce and cost you money—here are a few suggestions for getting them back

ARE you looking around for lost, strayed or stolen stainless steel drums, which are becoming almost impossible to replace today due to defense demands for stainless steel? Many firms which ship chemicals, foods or dye-stuffs in such drums are paying closer attention to drum maintenance, and to control of the movement of containers. From their experience have come these suggestions for tightening control, and helping to insure return of drums.

Offer an incentive for return of drums: This may take the form of a cash or credit refund. For example, one firm allows customers a 5% per gallon discount when drums are returned in good condition within a designated time limit. Some firms regard a penalty as more effective than a prize, for example, charging for unreturned drums.

Have your personnel spot drums in customers' plants: A large manufacturer of chemicals had its sales personnel who got into customers' plants, keep on the alert for its drums. Tactful handling usually gets them back.

Deliver on "Tit for Tat" basis: Instruct drivers and delivery men to deliver only as many "Fulls" as there are "Empties" to pick up. Determine how many containers your customer needs for temporary storage, and coordinate deliveries accordingly.

Use specially designed shipping labels: Make labels big and bright. Painted on notices or transfers may save money, but may not get the desired attention.

Keep track of containers on the move: Many firms number their drums, and record which have been shipped. This allows for easy checking when they are returned, and such records may serve to answer other questions concerning shipments.

Check up on your own plant: Stainless steel drums may be seen around the plant serving as stools, spare part bins, step ladders, etc. They are too valuable for that. A definite area, preferably enclosed, should be put aside for storing the drums. ●

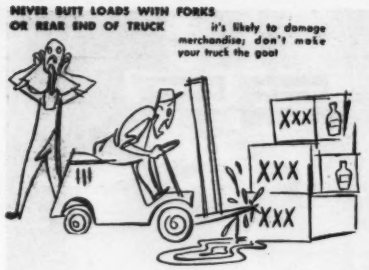
Safety Saves!

4-Star booklet of jolly jibes at the jokers who get into jams with your fork trucks has good accident-reduction possibilities

NOTHING since "Maim Street"—a prominent Insurance Company's serio-comic dramatization of Traffic Safety Rules—has spelled out the principles of safety so well as "Safety-Saves," published by a fork-lift truck manufacturer. As can be surmised, it deals exclusively with accidents caused by, and abuse to, this type of powered vehicle, its driver and its cargoes.

As in Maim Street, Safety Saves' cartoons make a safety violator look like a jassack—and that's its great secret of success. This booklet could be a factor in reducing plant accidents by placing a copy in the hands of every fork-lift operator.

The booklet contains 44 rules for safe operation of fork-lift trucks, 28 of which are illustrated with cartoons. Because pictures speak more eloquently than words, we have reproduced as many as possible on these pages—just to give an idea or two. ●


NEVER BUTT LOADS WITH FORKS OR REAR END OF TRUCK
it's likely to damage merchandise; don't make your truck the goat
XXX
XXX
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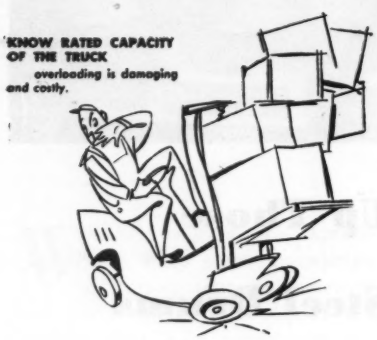
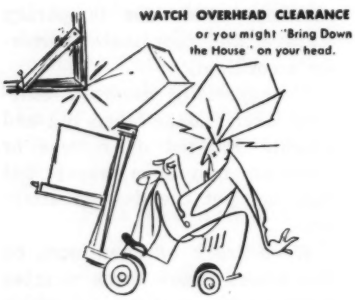
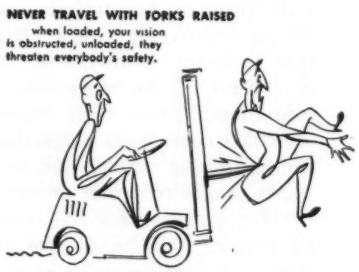
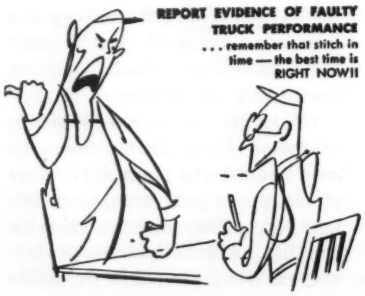
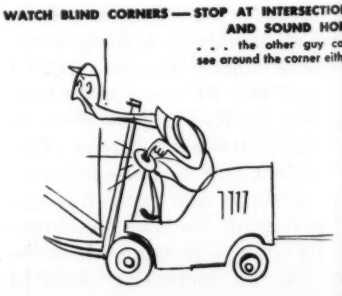










Cartoons reproduced through courtesy of

GOTTA MATCH? WELL KEEP IT IN YOUR POCKET
even with Protecto-Seal filler caps, don't take chances with open flames. Use safety light when checking your truck.

KEEP — AND TO KEEP — YOUR ARMS AND LEGS WHERE THEY BELONG
never place them between the uprights of the mast or outside the running lines of the truck

Clark Equipment Co., Industrial Truck Division.

Clothing Goes Sky High

Here is why air cargo is an essential part of the distribution program of this clothing firm

ONE would not ordinarily think of *perishability* as a factor to be considered when deciding whether or not to use air cargo in the distribution of clothing. But this factor was given a place of paramount importance when Lerner Shops, which deal in ladies' ready-to-wear, decided to make air cargo an essential part of its distribution program, according to M. O. Birk, Southeastern general manager of the firm. Mr. Birk in a recent interview pointed out that style in ladies' wear is as perishable as the most delicate flower. In order that merchandise might always reach the customer at the peak of its sales effectiveness, air cargo is utilized by this firm to provide overnight service to areas which cannot be reached by ground transportation in that time.

Discussing further this program of air delivery, Mr. Birk said that in establishing policy as to types of transportation services to be utilized in any line of business, there are necessarily many factors to be considered, such as the obvious considerations of total cost, service and flexibility, and the more indirect ones of warehousing space, customer satisfaction, sales reaction, insurance costs, and loss and damage claims. When Lerner Shops decided to establish a daily delivery service by Delta Air Lines air cargo to their shops in five southern cities, all factors were considered.

Utilizing a very complete record of each daily shipment made to each of its forty-four sales outlets, the company was able to determine quickly which points were not receiving overnight service. From past experience it had available enough information to determine accurately the physical capabilities of both truck and rail service to these hard-to-reach points. Using these points as the basis for initial considerations, the firm weighed cost against the advantages of faster delivery, quicker indication of sales response, lack of storage facilities at these locations, and greater flexibility of distribution.

The company found that, in most cases, the total cost of air cargo, with its many advantages, was no greater than for the first-class surface transportation previously used. Sometimes both time and money were saved. For example, the difference in cost in shipping a 1000 lb. shipment from an Atlanta warehouse to Miami via first-class surface transportation and the same shipment over Delta air cargo was about eight dollars, plus a difference of twenty-four hours delivery time, in favor of air cargo.

Mr. Birk continued by saying that in the ladies' ready-to-wear field, other considerations, of great importance but not so easily detected as cost factors, are matters of re-orders and determination of allocation of particular styles. Through the use of air cargo, Lerner Shops can place a "trial balloon" article in its stores and receive an indication of its salability much sooner than was previously possible. In this way, it can re-order much sooner when an item is popular, and avoid buying a large amount of an item which may quickly go out of style.

In summing up all of these factors, Mr. Birk is convinced that from the merchandising viewpoint, the use of air cargo is definitely an advantage to his firm, and one which more than pays its way. ●

DA NEW Products

FOR FURTHER INFORMATION USE READERS' SERVICE

Quick Ice Loading

To help speed perishable goods in transit by eliminating the need for moving refrigerator cars to an

ice chute, the Lewis-Shepard Co. has designed this new Car Icing Stacker. The unit, mounted on the bed of any highway truck, raises the ice by means of a hydraulic pump and lifting ram. It can be controlled from the carriage as the operator rides up with the load of ice, or from the running board of the truck. The use of the Ice Stacker means that trains do not have to be broken up to shunt cars to an ice chute since a truck with the unit can run right alongside a car and ice transferred. It is made in 2000-lb. and 5000-lb. capacities.

Circle 21 on Readers' Service Card

Featherweight Tractor

For slashing order-picking time, this new featherweight electric tractor is now being built by the Automatic Transportation Co. Designed to overcome a basic difficulty of materials handling equipment, the unit, called the Model FTE, is able to tow loads weighing up to 10 tons on a level floor. An operator may ride on the rear platform of the tractor, or when he has only a few feet to go, may walk the vehicle, controlling it by a handle on either side. This feature permits much faster tractor-trailer systems

of order picking than are now in use. Designed to work in cramped quarters, the battery-operated FTE measures only 29 inches at its broadest point.

Circle 22 on Readers' Service Card

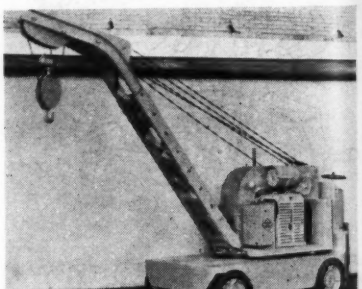
Leaks Permanently Sealed

A new discovery for permanently sealing leaks in gasoline tanks, radiator hoses, flexible tubing, windshields, etc., is now being produced by the Allen Products Corp. "Seal-All" sticks to any surface, never becomes brittle and is not affected by gasoline, oil, naphtha or water. It also makes quick repairs to cracked distributor caps and battery cases, insulates electric wiring, waterproofs spark plugs and ignition systems. "Seal-All" is fully warranted by the manufacturer.

Circle 23 on Readers' Service Card

Special Purpose Crane

This electric - powered, mobile crane, known as the Model CZ, was designed by the Elwell - Parker Electric Co., to solve problems involved in handling equipment or material which does not lend itself to conventional handling methods by fork or platform truck, or for service in outside or other areas not serviced by overhead cranes. Redesigned with a wider bed and higher operator control pedals for better forward visibility, the crane



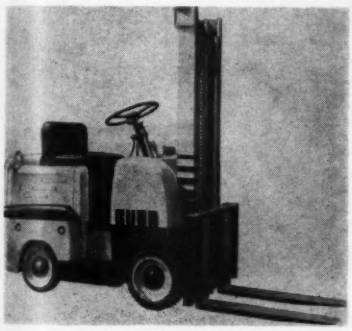
has such features as four-wheel steer, telescoping boom, silent efficient worm drive, and three individual motors. The crane capacity is 10,000 lb. at 5½ ft. radius. Power is supplied by either an electric storage battery or gas-electric unit.

Circle 24 on Readers' Service Card

CARD . . . .

New Series from Buda

A new series of fork trucks, the FT series, has been announced by the Buda Co. Completely new from the ground up, this series embodies the latest advancements in engineering, styling, accessibility and operating work performances. The FT series, powered by either a Buda diesel or gasoline engine, is available in 12 models on solid or cushion tires at varying capacities. Two speeds forward and reverse,



quick change heavy-duty clutch, complete complement of electrical gauges on full front vision instrument panel, and complete accessibility of all parts for maintenance and servicing—these are a few of the features of the new series.

Circle 25 on Readers' Service Card

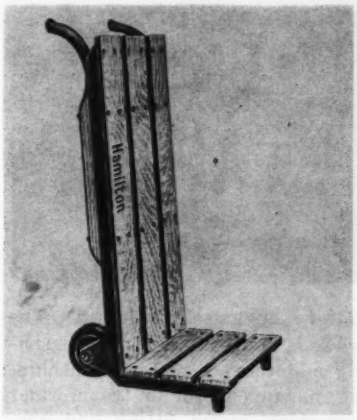
Easy Floor Repairs

For both repairing and resurfacing floors of practically any composition, concrete, stone or brick, the Flexrock Co. recommends its new material, "Trowel-In." An answer to the need for a material that can be kept on hand ready for immediate use in floor deterioration problems, "Trowel-In" repairs are ready for traffic within 18 hours. No heat or special skill in applying is needed with "Trowel-In," nor are there any extra items required. The material does not appreciably raise floor level, and in patching produces smooth repairs without chopping out the old floor.

Circle 26 on Readers' Service Card

A Handy Hand Truck

Originally designed to handle bundles of newspapers and magazines, this two-wheel truck, manufactured by the Hamilton Caster and Mfg. Co., is useful in other fields for carrying cartons, boxes and packages. Feet under the lower platform, which is 15 inches deep,

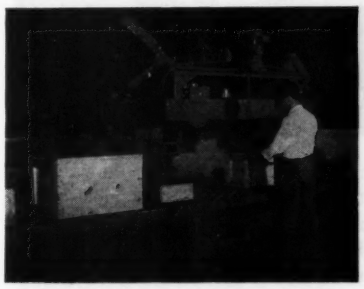


stabilize the truck during loading. Weighing 110 lbs., the truck has a capacity of 400 lbs. Woodwork is bolted to heavy steel frame, and the wood handles are steam bent. The 6x1½-in. wheels have molded-on rubber tires and roller bearings.

Circle 27 on Readers' Service Card

Putting on the Lid

Here's a new machine, developed by the packing equipment division of the Food Machinery and Chemical Corp., which automatically

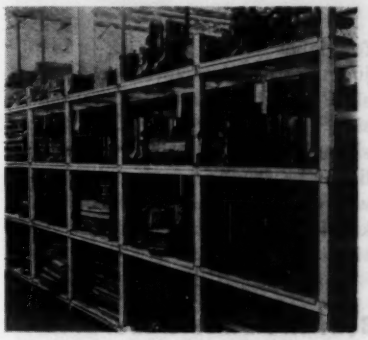


end-nails lids on boxes of mixed sizes. The new Random Size Box Lidder automatically adjusts its nailing mechanism to any size box, from 6x6x15 in. to 18 by 24x50 in., end-nailing lids at the rate of 400 to 600 boxes of mixed sizes per hour.

Circle 28 on Readers' Service Card

Heavy-Duty Pallet Racks

The Borroughs Mfg. Division of American Metal Products Co. has introduced a new design in standard tubular pallet racks which per-

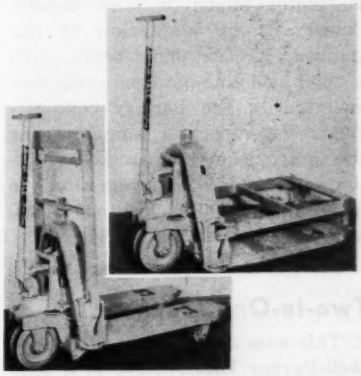


mits storage of dies. Sturdy steel deck is placed on units of pallet rack bed with flanges turned down on each side of steel deck. The resulting unit is capable of carrying tremendous amounts of weight, depending on the size of the opening. Since there is no bolting or welding, the entire rack is easily assembled and disassembled. A wide variety of deck material for the shelf surface is available, including sheet steel, plywood and board.

Circle 29 on Readers' Service Card

Handles Skids and Pallets

For handling both skids and pallets, this hand lift pallet truck, made by Yale & Towne Mfg. Co.,



is now available with a dual-purpose superstructure which enables it to handle seven and 12-inch skids as well as single or double faced pallets. In a raised position, the superstructure provides a backrest

DA NEW Products

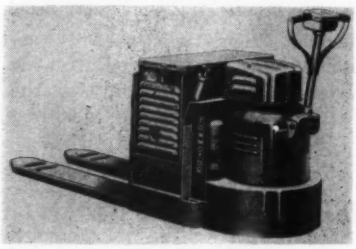
Continued from previous page

for pallet loads. Lowered, it is adjustable to either seven or 12-inch skid heights by a simple cam and slot arrangement. Available in either mechanical or hydraulic lifts, the truck is designed for use where the volume does not justify keeping specialized truck for both skids and pallets.

Circle 30 on Readers' Service Card

Built-In Power Generator

To eliminate the need for conventional electric storage batteries and re-charging equipment, the Towmotor Corp. has developed a built-in generator, for use with its electric pallet trucks, which pro-

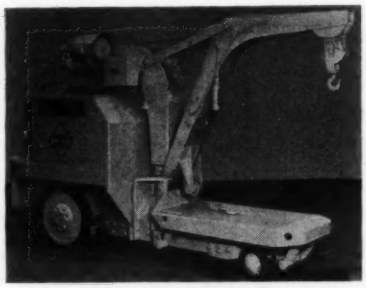


vides power for "round the clock" operation. The new unit, called Towmotor Model W with Ready-Power, is an adaptation of the standard electric pallet truck, with a small, gasoline-powered generator mounted in the battery compartment. The operator simply turns the ignition key and presses a button, and current is generated to move up to 4000-lb. loads 24 hours a day.

Circle 31 on Readers' Service Card

Two-In-One Truck

This new development of the Elwell-Parker Electric Co. is a combination low-lift platform truck and crane, designed to solve plant maintenance problems and for use in unconventional handling situations. The truck has a standard 4000-lb. capacity platform for handling skids, plus a powered winch for pulling heavy loads on or off the platform. The winch hoists loads up to 2000 lbs., and swivels 180 degrees. Power is supplied by either an electric storage



battery or gas-electric unit. The truck is well suited for transporting maintenance material, machinery moving, motor or transformer placement, steam fitting and general plant repair work.

Circle 32 on Readers' Service Card

New Medium-Duty Tractor

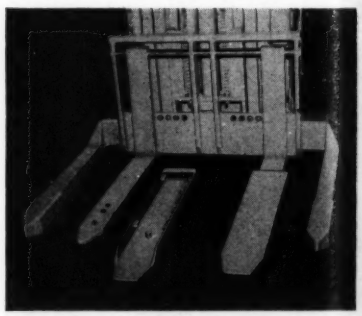
A new medium-duty electric tractor is now available from the Mercury Mfg. Co. for use in automo-

tive, aviation, railroad, textile, food and other industries where materials handling is an important factor. Called Model A-545, the unit is rated at 400-lb. normal and 2000-lb. maximum drawbar pull, and when powered by the specified 45-volt source, attains a light running speed of 7½ mph. Travel can be controlled manually in the standard arrangement or by foot pedal where preferred. Cushion type tires, semi-elliptical spring suspension front and rear, and a unit-constructed, double-reduction spiral bevel and spur-geared power plant are additional features of the new tractor.

Circle 33 on Readers' Service Card

Fork Extensions

This new attachment, telescoping fork extensions, has been developed by the Raymond Corp. for use with its line of electric trucks in plants and warehouses where both large and small pallets are used. The fork extensions remain on the elevating forks at all times, assuring that they will always be available when needed. Formed steel channel sections with a retaining bar welded underneath fit over the forks. A locking pin welded to the fork extension drops into any one of a series of holes drilled into the fork, making it possoble to extend the fork to several lengths. The extension



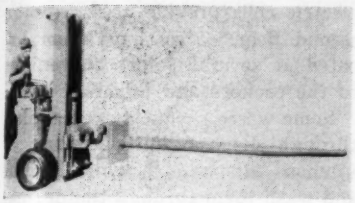
is available on both the 2000-lb. and 3000-lb. capacity Raymond straddle type electric truck.

Circle 34 on Readers' Service Card

A Detachable Ram

The Baker-Raulang Co. has introduced this new detachable ram to provide metal working plants with an efficient means of handling coiled wire. Easily installed or detached, the ram is connected to the truck when the operator moves the truck into position at rear of the ram and raises the carriage so that cradle arms engage a mounting spool on the back plate of the ram. The ram is detached when truck carriage is lowered, disengaging the cradle and spool. In carrying

coils of steel wire from storage to wire-drawing machines, ram is placed in feeder and then detached from the truck. The ram stays in

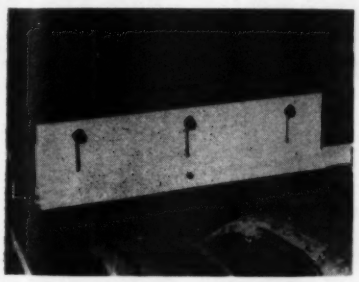


feeder, and wire is run off into drawing machine — the truck is then free to pick up another ram, load it with coils and service another feeder.

Circle 35 on Readers' Service Card

Gives Protection from Mud

A new accessory for the trucking industry, "Cab Mud Guard," mounted to the tractor frame ahead of the rear tires, protects tractor cab, air line connections, refrigeration unit and other rear-mounted equipment, from dirt, tar and mud thrown up by the rear wheels of the tractor. Use of this device can result in considerable savings in cleaning time and money, say its manufacturers, Whitehill - Eaves, Inc. The unit is mounted by means of a 1½-in. steel tubing assembly which is fastened to the tractor frame with two tension clamps. A heavy-duty flexible rubber guard is mounted between heavy gauge steel plates and bolted to the tube.

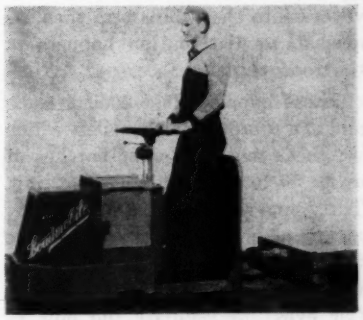


Shielding the cab from flying debris, the flexible rubber guard gives under deflection of the trailer on curves and uneven roads.

Circle 36 on Readers' Service Card

New "Stand-up" Tractor

To cut down handling costs in wholesale grocery warehouses where items are stored on skids or pallets, the Market Forge Co. is making this new "Stand-up" Drive Load-Mobile Tractor. One operator can pass through the selection aisles, loading orders on the trailer. When he finishes, the entire load is hauled to the shipping room for delivery. The low platform of the truck makes it easier to get on and off. Another feature for easy operation is the use of the same pedal for forward and reverse

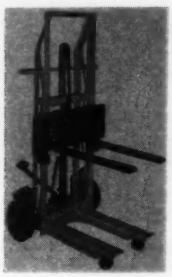


movement. The tractor hauls up to 10,000 lbs., and is powered by a 340 a. h. battery.

Circle 37 on Readers' Service Card

New Models from Big Joe

To supplement its Model 14 All-Purpose lift truck, the Big Joe Mfg. Co. has announced its new models of both hydraulic and electric-hydraulic lift trucks. Four of the new models are available in 800-lb. capacities with maximum lift heights of 52, 66 and 78 inches. Designed for operating in restricted spaces, these trucks are useful in small and large plants alike. The use of dual ball and roller bearings results in smooth, effortless performances under capacity loads. Electric models have heavy-duty



recharging plant, and a key-locked ignition system prevents unauthorized use of the equipment.

Circle 38 on Readers' Service Card

Adjustable Loading Dock

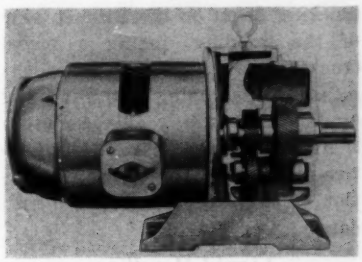
For use in operations which require a small, light-duty, adjustable loading dock, the new Model

48 "Rite-Hite" is now available from the Karl A. Herman Co. A manually operated, counterbalanced dock, the unit requires no electric or hydraulic controls. Rated at 10,000-lb. capacity, the Model 48 is 42 in. wide with a dock plate 48 in. long and an 18-in. vertical adjustment. The curved lip design provides smooth contact with the carrier at all positions. These features assure easy and smooth contact with the carrier at all positions.

Circle 39 on Readers' Service Card

Gear Reducing Unit

The new Reuland gear reducer, say its manufacturers, the Reuland Electric Co., is ideal for cranes, conveyors, and other machinery where heavy loads require smooth acceleration at reduced motor speeds. Consisting of a standard Reuland fluid-shaft motor and gear train designed into a single compact unit, the purpose of the re-



ducer is to convert the motor's ordinary high speed into a slow speed, high torque output. The integral fluid coupling provides cushioned starting of heavy loads and protection against "jamming" of equipment. All gears operate in an oil bath, assuring positive lubrication at all times.

Circle 40 on Readers' Service Card

. . . Integrates Handling

(Continued from Page 19)

Construction Features

The building contains 133,000 sq ft of floor space and is located on a lot measuring 136,000 sq ft. About half the floor space is in a two-story section, the balance is a high-studded, single-story warehouse section at the rear. Approximately 100,000 sq ft, or three-fourths of the total space, is on the ground floor to facilitate streamlined methods of handling merchandise.

The two-story section employs the very latest construction technique. It is fire-proof, vermin-proof, and houses all the Johnson and Murray Division manufacturing and sales activities. Offices, display rooms and cold storage facilities also are contained in this section.

The manufacturing area comprises some 30,000 sq ft, divided between the first and second floors to take advantage of the gravity flow necessary in many operations. The cold storage area consists of one room with subzero temperature for storing frozen fruits and vegetables, and another at about 34 deg F for keeping dried fruits and nutmeats in good condition.

The one-story warehouse section contains 65,000 sq ft of unobstructed floor space, with bays 30 x 40 ft, and an 18-ft ceiling to make higher piling possible. Nineteen trucking doors on the Life St. side of the building, facing a paved trucking area, provide excellent means for shipping and receiving by truck. A siding of the Boston & Albany Railroad parallels the entire rear side of the warehouse section, with space for eight railroad cars.

Liquid Handling

Beneath the floor of the Machine Shop, on the first floor of the plant, are four 8000-gal storage tanks (each with a capacity of one railroad tank car) for holding corn syrup and liquid sugar supply. This supply comes in either by tank car or tank truck. From this storage point the syrup is pumped as needed through insulated pipes to the manufacturing points in the food plant.

Located on the first floor of the warehouse section are four granulated storage bins with a capacity of 100,000 lb. Sugar comes in truck loads and is conveyed automatically by bucket elevators and spiral conveyors into these bins and then, as needed, to distribution hoppers in the food plant.

These hoppers hold 2000 lb each and are equipped with scales, which weigh as many as eight batches of up to 50 lb each without resetting. The hoppers serve both floors by means of chutes running from the top to the bottom level. "Bindicators" on the hoppers act as "electric eyes" to regulate the flow of sugar automatically and keep them full.

No Manual Handling

A network of inter-connecting monorails equipped with power-operated hoists facilitates the handling of all ingredients to and from the modern hulling, clarifying, mixing and cooking equipment on the upper level. Nothing need be handled manually.

As mentioned, doors with photo-electric cells provide access to the second floor. They have been located at several points convenient to the cookers and mixers.

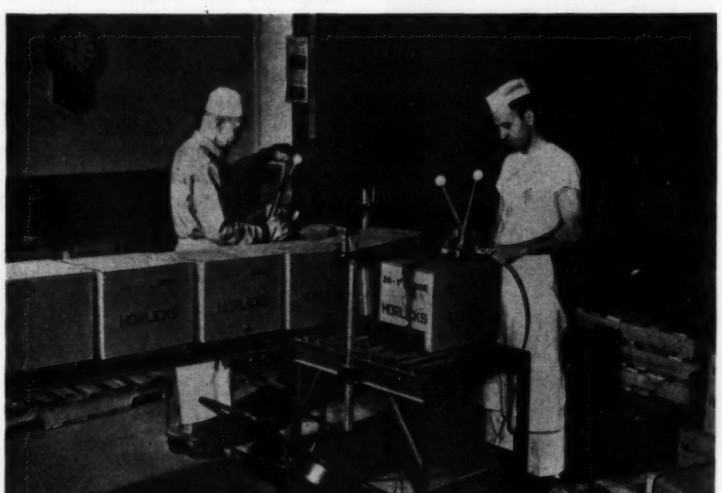
Some waste products are handled through disposal units similar to kitchen "disposals," which grind and wash them through the drains. Other refuse is accumulated in a special room with a metal chute to the outside, through which materials are consigned to trucks and carried away daily.

After the processing operations have been completed on the second floor, the finished products flow by gravity to filling and canning machines on the lower floor. Here, the cooling and packaging operations are performed "in line," enroute to the warehouse and shipping departments.

125 Carloads in 60,000 Sq. Ft.

The layout of the warehouse utilizes the cubic space most efficiently. Use of fork-lift trucks with

(Please Turn to Page 50)



By placing the two Acme Steel conveyor strapping units shown above at the end of its roller-conveyor line, the Horlick Corp., Racine, Wis., increased the speed of the strapping operations 400%, eliminated a series of handling operations, and reduced labor costs. Formerly, the cases were stored on pallets until ready for shipment, then taken to the strapping section, unpiled, strapped, and repalletized. By strapping and palletizing the cases as they come to the end of the packing line, the additional labor was eliminated. The change-over has meant a reduction of 8.4 cents per case in labor costs.

FREE Literature

Information on latest booklets, manuals and other technical publications, text books and visual aids of value to you. Use post-paid card for more data.

"OFF THE CUFF"

The new edition of Yale & Towne's handling magazine is now available, filled with many informative articles about materials handling subjects. Such titles as "Packer Gets More Space, More Production," "Greater Tonnage for Fewer Man-Hours," and "So You Want to Handle Steel" give some idea of the magazine's contents.

Circle 1 on Readers' Service Card

TOWMOTOR JOB STUDY

This latest Towmotor job study, No. 111, shows with action photos how streamlined handling methods in a transfer terminal have reduced loading time per trailer by 50 per cent, breakage of bagged goods by 90 per cent, and saved $750.00 a month in damage claims. By using manpower more effectively and eliminating many arduous lifting operations, man-hour costs were reduced by 20 per cent.

Circle 2 on Readers' Service Card

BARRETT HAND-LIFT TRUCKS

Bulletin 5110, just issued by the Barrett-Cravens Co., offers comprehensive information on the current models of the company's single stroke hand-lift trucks. Distinctive mechanical features of the trucks are illustrated, and complete specifications are given for all models.

Circle 3 on Readers' Service Card

ELEVATING TABLES

The Raymond Corp. describes its complete line of elevating tables in a new bulletin, No. 206. Models shown include tables for die handling, work positioning or strip and sheet feeding operations. The tables have a range of capacities from 2000 to 20,000 lbs., in a variety of models and ranges of elevations.

Circle 4 on Readers' Service Card

TWO CRANE TRUCKS

Models CXB and CXF locomotive type crane trucks are the subject of Bulletin 1613, recently issued by the Baker-Raulang Co. The six-page pamphlet uses cutaway photos of component parts to make construction details easy to follow. Complete engineering specifications are also given, together with action photos which show the trucks at work in a variety of applications.

Circle 5 on Readers' Service Card

SHIPPING BOX BOOKLET

Number 12 in the Hinde & Dauch Paper Co.'s packaging series, "How to Ship Heavy Products in Corrugated Shipping Boxes" tells how nails, nuts and bolts, washers, and similar small, heavy, bulk packed items can be shipped in corrugated "keg boxes" at substantial savings in packaging and freight costs. The booklet contains several case history applications, citing actual user experience, and including figures on savings.

Circle 6 on Readers' Service Card

WHEEL AND CASTER

Information about casters and wheels is found in abundance in the Kilbourne & Jacobs Mfg. Co. catalog recently released. All types of casters and wheels are described and illustrated, and a special tabular index enables the reader to find quickly the right kind of caster or wheel for his loading problem.

Circle 7 on Readers' Service Card

FACTS ABOUT MOTOR TRUCKS

The 1951 edition of "Motor Truck Facts" is now available from the Automobile Manufacturers Assn. An invaluable source of information on motor trucks, the booklet presents facts, figures, and charts on production, sales, exports, registration and transportation by trucks and offers new data availalbe for the first time on trucks owned by various industry groups.

Circle 8 on Readers' Service Card

ELEVATOR SILL

Facts about the Alexander sill, a patented device which operates like a drawbridge, bridging the gap between elevator and building floors, are given in a new circular offered by the Alexander Sill Co. Illustrations show models and uses of the unit.

Circle 9 on Readers' Service Card

A PALLET HANDBOOK

Much engineering data on pallets and palletizing is given in the new pallet catalog-handbook just issued by the Acme Pallet Co. Effectively presented and illustrated, the booklet deals with such subjects as "the engineering facts required prior to palletization," "how to choose the right pallets," "pallet patterns," "pallet terminology," and many other topics of interest to present and potential pallet users.

Circle 10 on Readers' Service Card

FLOOR REPAIRING

Repairing and resurfacing of floors, using "Flinthard," a new type of flooring material, is the subject of a bulletin released by Paramount Industrial Products Co. Complete information about this ready-mixed material, and illustrations of its many uses are featured.

Circle 11 on Readers' Service Card

MAPS FOR BUSINESS

A new bulletin outlines the features of the Hearne Brothers' new maps for the trucking and other industries. These include a markable, washable finish, one-motion point finder, and the information on the maps printed in five colors for easy reference. The company offers maps which include every large city and suburban area in the U. S.

Circle 12 on Readers' Service Card

HAND TRUCKS

A variety of hand trucks are described in a handy colored bulletin just released by the Rapids-Standard Co., Inc., giving information and illustrated by photos and drawings. Models, wheels, and the wide variety of materials which can be handled with the trucks are displayed.

Circle 13 on Readers' Service Card

SIMPLIFIED PACKAGING

This recommendation for standard malleable iron screwed pipe fitting, black or galvanized 150-lb. steam working pressure for two-inch pipe size and under, is available for acceptance or comment. Developed by an industry committee, the recommendation is made to establish a simplified schedule of standard quantities per unit package for the pipe fitting described.

Circle 14 on Readers' Service Card

CONVEYOR SPECIALISTS

The Corrigan Co., which specializes in designing, developing, manufacturing, and erecting conveyor systems for industry, is described in a recently released bulletin. Photos show the company's facilities and some of the equipment they offer.

Circle 15 on Readers' Service Card

BOOKS

CLINIC PROCEEDINGS

The Industrial Management Society has published the proceedings of the 15th annual time and motion study and management clinic. The 128-page book contains charts, forms, and illustrations, and complete transcripts of talks by top leaders of labor, management and government on such topics as materials handling, plant layout and time study. 35 E. Wacker Drive, Chicago 1, Ill. $4.00.

NEW SHIPPING METHODS

Reducing damage and handling costs by the use of a new shipping plan is discussed in "The Addison-Semmes Plan for Faster, Easier Shipment of Corrugated Box Products," published by the Addison-Semmes Corp. The manual explains with photos and figures, as well as text. 1800 Thurston Ave., Racine, Wis. $2.50.

. . . Cut Delivery Costs

(Continued from Page 24)

Stops per Mile Affect Cost

As you see, retail delivery costs per 100 points rise sharply as points per mile decrease. The relationship is quite uniform, and only two branches were out of line by more than 10 per cent. Variations from the line help point out cost differences due to maintenance practices, vehicle age, etc.

Chart 3 is but another way of saying that the major correctives for the wide cost differences shown there are not to be found in improved maintenance or in better vehicle performance—important as these factors are—but, rather, in the realm of sales strategy.

Is Branch No. 10 trying to serve too large an area? How about unprofitable routes in Branch No. 9? These are the kind of questions suggested by this analysis.

Relating Cost to Sales

As you see, in Chart 5, costs rise from less than 40 cents per 100 points for the lowest cost route, to nearly $2 per 100 points for the highest cost route.

Let's consider this chart for a moment in terms of per cent of sales. The four top routes—roughly 10 per cent of all routes—are being serviced at a cost of more than 5 per cent of sales. Going down a notch, the next three routes cost from four to five per cent of sales.

Are these high cost routes peculiar to this one dairy?

Here's a second example: For this particular dairy, total route costs, as a per cent of sales, were comparatively low. Yet, six of its 39 routes show a delivery cost of four per cent or more.

Effect on Profits

What do these high delivery costs do to route profits? To answer this question we made a detailed analysis of this operation.

If this dairy is typical, it probably spends about 16 cents a point to buy and process its milk, and to pay for administrative overhead and advertising. At a retail selling price of 20 cents per point, this leaves about four cents per point for route service.

Four cents a point—out of which must come drivers' compensation, delivery costs, and net profit.

The drivers' share of this four cents per point is kept in line by your commission structure—a structure based on a close calculation of per-point compensation at various volume levels. Put another way, a good commission system will not saddle any route with disproportionately high driver's compensation.

Cause of Profit Variation

The principal cause for the wide variation in profit margin per route is delivery expense—expense which has not been subject to this close calculation.

Chart 6 shows net profit and delivery costs per 100 points for each of this dairy's 39 retail routes. Net profit per 100 points is shown above the horizontal line, and delivery costs per 100 points below this line.

Note how heavy delivery costs pull down profits, and how profits rise as delivery costs decline. Note, particularly, that five routes are operating at a loss.

Once each route is costed in this way, you begin to get an idea of where you are making money, where your net begins to thin out, and where you undergo a loss.

How would your retail route stand up under such an analysis? What would the profit profile look like for your operation?

Sales Trend Must Be Watched

Another example of the need for going behind the conventional reports of point volume is to be found in the sales trend for a given route. We have found instances of routes which have shown good volume gains, but in which steeply mounting delivery costs more than consumed the profit on the added volume. In other words, the cost of running extra miles more than ate up the profit from extra points.

In Chart 7, this dairy's 39 retail routes are put into three groups of 13 routes each, according to delivery cost per 100 points.

The left hand bar shows the per cent of total retail sales for each group of 13 routes. As you see, each group accounted for about one third of total sales. But when it comes to net profit, the story is different.

The 13 routes with high delivery costs, shown at the bottom of the chart, although responsible for nearly one third of total retail volume, brought in only 1.2 per cent of retail route net profit. Here are the "couple of routes" that sales managers tell us "aren't making much money."

The low-cost routes, on the other hand, accounted for over 60 per

(Please Turn to Page 46)

You can guard against tire waste in these days of threatened shortage by keeping check on dual wheel trucks where the tires become unmatched, causing one to carry a double load. This simple-to-make tool, consisting of two strips of 2 x 2 board, L-shaped, with a metal cross brace, enables one, by holding one side flat against the outer tire as shown, while the other rests on the tires, to see immediately if one tire has worn below the other.

How much will you save in the long run?

How will your hauling costs stack up after a multitude of miles and a couple trips around the calendar?

You'll get a *good* answer with Dodge "*Job-Rated*" trucks! Because Dodge trucks are engineered at the factory to *stay* tight-fisted with costs. There's one to fit your job and fit it to a "T" . . . "T" for "Thrift," that is! From engine to rear axle, they're "*Job-Rated*" for loyal service and long-range economy.

Dodge trucks are light on gas and low on upkeep—because each is powered with the *right* high-compression engine. For example, heavy-duty models, 2¾ tons and up, offer a whopping big power plant that's a marvel for economy—thanks to such extra values as a twin carburetion and exhaust system.

You can't beat a Dodge for easy handling, either. Wide front tread and short wheelbase do the trick. A Dodge is easy to steer, too—and fitted with the best brakes in the business.

See your Dodge dealer for *all* the facts. Learn about bigger payload capacity, extra riding comfort and a raft of other advantages that make Dodge "*Job-Rated*" trucks save you more in the long run.

DODGE "Job-Rated" TRUCKS

Circle No. 112 on Readers' Service Card for more information

Chuting the News

(Continued from Page 13)

The full committee roster of all 47 appointees includes:

MHI-AMHS Cooperation Committee — Chairman: M. W. Heinritz, Gould-National Batteries, Inc.; C. B. Elledge, General Electric Co.; R. K. Hanson, The Material Handling Institute; J. W. Wunsch, Silent Hoist and Crane Co.

Industry Educational Committee —Chairman: H. M. Palmer, Lewis-Shepard Products, Inc.; D. H. Bitney, Union Steel Products Co.; E. W. McCaul, Jervis B. Webb Co.; J. W. Wunsch, Silent Hoist and Crane Co.; plus a representative from each of the vertical trade associations.

Finance and Budget Committee— Chairman: E. W. Allen, Edison Storage Battery Div., Thomas A. Edison, Inc.; J. A. Baldinger, Automatic Transportation Co.; G. J. Hanhauser, Fab-Weld Corp.; W. G. Reycroft, The Bassick Co.

Membership Committee—Chairman: E. J. Byrne, Chisholm-Moore Hoist Corp.; Walter Krueger, American Steel & Iron Works; W. H. Noelting, Faultless Caster Corp.; J. L. Pischke, American MonoRail Co.; G. D. Raymond, Sr., Raymond Corp.; R. E. Schreiber, Monarch Rubber Co.; H. D. Stone, Pittsburgh Steel Products Co.; Jervis C. Webb, Jervis B. Webb Co.

Industry Service Committee— Chairman: George R. Brockway, Rapids-Standard Co., Inc.; A. F. Anjeskey, The Cleveland Crane & Engineering Co.; J. G. Bucuss, The Acme Steel Co.; M. W. Heinritz, Gould-National Batteries Corp.; J. M. Moon, The Signode Steel Strapping Co.; G. B. Davis, The Baker-Raulang Co.; W. E. Schirmer, Clark Equipment Co.

Washington Committee — Chairman: J. C. Mevius, American Engineering Co.; H. M. Palmer, Lewis-Shepard Products, Inc.; L. W. Shea, The Union Metal Mfg. Co.; R. K. Hanson, The Material Handling Institute, Inc.

Exposition Committee (5th National Material Handling Exposition—1953)—Chairman: J. C. Mevius, American Engineering Co.; Gordon Berry, The Electric Products Co.; Harry Bristoll, The Stanley Works; Eugene Caldwell, Hyster Co.; Edward McCaul, Jervis B. Webb Co.; Wendell Reycroft, The Bassick Co.; C. E. Smith, Towmotor Corp.

Planning Committee—Chairman: W. H. Noelting, Faultless Caster Corp.; J. G. Bucuss, Acme Steel Co.; Eugene Caldwell, Hyster Co.; H. A. Carter, Geneva Metal Wheel Co.; J. H. W. Conklin, Yale & Towne Mfg. Co.; J. C. Mevius, American Engineering Co.; Frank Seaman, Robbins & Myers, Inc.; L. West Shea, Union Metal Mfg. Co.; Roland Whitehurst, Electric Storage Battery Co.

Cargo Cooler Passes Test

A 58-hour test run from Chicago to Boston with a cargo of fresh hanging beef has proven the ability of the Hunter Cargo Cooler to maintain desired temperatures for the transportation of meat.

The cargo cooler is a thermostatically controlled, forced-air circulation, dry ice refrigeration system. A discharge of CO_2 gas prevents bacteria growth or sliming. In the 991-mile trip of three days' length, outside temperatures varied from 63 to 80 degrees.

Ullman Heads NFWA

Jerome D. Ullman was elected president of the National Furniture Warehousemen's Assn. during the annual NFWA convention in the Biltmore Hotel, Miami Beach, Fla. Ullman's acceptance speech climaxed the session, attended this year by more than 500 registrants.

Business meetings covered these topics: a report on the Uniform Commercial code, a group insurance plan for employees of NFWA members, extension of NFWA Guaranteed Collection Plan, functions and responsibilities of state associations, cost-ratio statistics and industry's position in the national defense program.

MH Staff to Aid N. Y. Industry

A program of expanded sales engineering and factory service to help Greater New York area industries cope with high unit costs of operation is being developed under James Tinlin, one of the nation's leading materials handling specialists.

Tinlin and a staff of 30 sales and service personnel will serve manufacturing, waterfront, warehouse, transportation and other industries related to the materials handling field.

(*Please Turn to Page* 54)

A big International truck whips through the "figure 8" test run at the International Harvester Co.'s new 6½-sq. mile proving ground near Phoenix, Ariz. This test, in which the driver takes the truck through a series of high speed figure 8's, tests wheels, steering, and axle spindles. Wheeled outriggers prevent the truck from rolling over on the turns. The proving ground also has a paved and a dirt test track.

Only ONE bill

Whether your shipment is destined for Keokuk or Timbuctoo, you get only one bill... when you ship via National Carloading. Think of the headaches you avoid! You have less paperwork, less bookkeeping. Your shipment travels faster, and there's less chance of breakage or loss. Tracing is simplified too, since you have only to call National Carloading to find out about your shipment. Responsibility for your shipment rests with one reliable forwarder... all the way. It's "the Best Way" to ship.

"The Best Way"

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NATIONAL CARLOADING CORPORATION

JUDSON-SHELDON DIVISION • JUDSON FREIGHT FORWARDING DIVISION

19 RECTOR STREET, NEW YORK 6, N. Y.

Serving 30,000 communities through more than 100 stations in the U. S. and agents in principal foreign countries.

Circle No. 113 on Readers' Service Card for more information

. . . Profitable Work Horses

(Continued from Page 27)

trical counterpart, when we include with the latter one or more storage batteries and their attendant charging equipment.

Application Considerations

The question arises where these machines are to be used. Machines with gasoline motors have found favor in locations where there is good ventilation. This does not necessarily mean the "wide open spaces." These machines have been used satisfactorily in textile mills, general warehouses, and in production plants, as well as on shipping platforms. The one requirement is that the work be done where there is no danger of exhaust accumulations in "dead" spots.

This type of equipment is especially useful in plants where there are long ramps, which quickly exhaust the capacity of a battery-powered unit.

The electrically-driven machine finds its most important application in locations where fumes may accumulate—not necessarily dangerous but obnoxious because of odors which may be harmful to the products handled and stored, as in the cold storage field. Here, the rooms not only are air tight but are filled with food products—such as butter, cheese, fruits—which are highly susceptible to any foreign odor. Here, the electric truck is a *must*, just as it is in food processing plants where the products are subject to contamination from this cause.

Should the purchaser decide to use a gasoline-powered truck, he should insist upon the precaution of having all the "underwriter approved" accessories for preventing fires and danger to operators.

In comparing one make of machine in the low-lift class, with another, he should note the general arrangement of the means used to lead off exhaust, the location and protection given parts of the machine—such as the muffler, which heats up—being sure that they are so mounted that the operator cannot inadvertently come into contact with them. It would also be advisable for him to look into the new catalytic agents recently introduced for placing in the exhaust line to absorb and neutralize carbon monoxide.

Those deciding upon electrically-powered equipment will face questions regarding the kind of battery and the type of charging equipment best suited to their needs.

The choice of battery falls between the lead-acid and the nickel-iron-alkaline types.

A lead-acid battery, compared with a nickel-iron-alkaline one of equal capacity, is lower in first cost and loses less capacity as temperatures drop below normal. But this type of battery can be injured seriously by overcharging, complete discharge, or by accidental short circuiting.

In contrast, the nickel-iron-alkaline battery is lighter, is not harmed by overcharging, complete discharging or short circuiting, and can be left idle for an indefinite period without ill effects. Against these advantages, for which longer life is claimed, must be weighed the greater initial investment.

This is another instance where there has not been sufficient time to reveal in practice just what the economic picture is.

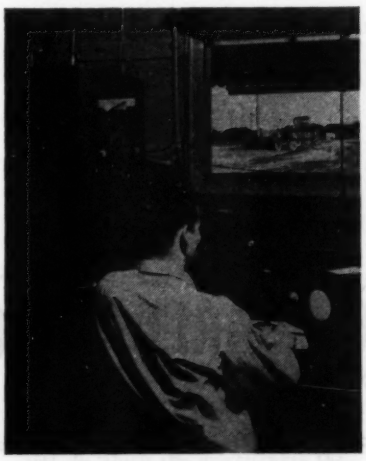
It was once thought, for example, that lead-acid batteries were necessary for continuous operations in cold storage rooms. Actual tests have shown, however, that the electrolyte of a battery does not reach a danger point even when working in a temperature of 10 deg F because of the heat generated within the battery when it is in use. The real difficulty in such operations seems to lie in the stiffening of the hydraulic oil and the grease in the running gear. This factor seems to be more important in lowering the capacity of a battery than the cold environment itself.

When electrically-powered equipment is run in a room at lower than zero temperature without being brought out for warm-up periods, the battery must be recharged after four hours of service. All such factors must be taken into account in deciding on both the number of batteries and the charging equipment needed to keep them in condition for a given operation.

A source of direct current with proper characteristics must be available for battery charging purposes. Rectifiers and motor generator sets are the two types of equipment between which a choice has to be made.

A few years ago, we could say without reservation that motor-generator sets were more reliable, but the manufacturers of rectifiers have made such strides in improving their product that the advantages are decreasing. Rectifiers are lower in first cost, but it seems reasonable to assure that motor-generator sets will have longer life. The latter also appear to have the edge in situations where there are excessively high temperatures and vibrations which might upset the adjustments in rectifiers.

(*Please Turn to Page* 48)



The dispatcher shown here controls the movement of a fleet of 24 mobile handling units at the Timken Roller Bearing Co. plant at Canton, Ohio, by means of Motorola FM 2-way radios, installed on all vehicles. The mobile handling equipment, including locomotive cranes, a jeep, fork trucks, and nine straddle trucks, equipped with 2-radio radios, is dispatched from a central point around the plant as needed, eliminating waste in movement time, dead-heading, and improving control and overall operating efficiency. Requests are telephoned from different parts of the plant to the dispatcher who directs equipment accordingly. Work recorders on each radio equipped vehicle prove the increased efficiency resulting from the 2-way radios.

It's what's up here that counts!

We really aim to do our job of freight transportation so well that you'll continue to route freight our way, year after year.

That kind of service means putting to good use ***for you,*** the experience gained throughout many years in handling freight for shippers and receivers in your particular industry.

A railroad must not only have the equipment and facilities to give you fast, dependable service but also have traffic representatives who understand and speak your language. In short, "it's what's up here" that counts. We'll be very pleased to serve you at any time.

• • •

Need passenger reservations? All departments of Union Pacific work closely together. The representative you know will be glad to help you with your travel problems.

Be Specific – Ship "Union Pacific"

(Offices in 70 cities throughout the U. S. A.)

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. . . Delivery Costs

(Continued from Page 40)

cent of total retail profit. In other words, on only slightly higher total volume, these 13 low-cost routes turned in more than 50 times the profit realized from a similar number of high-cost routes.

Individual Vehicle Studies

Now let's turn to another principal way in which management may measure delivery efficiency—individual vehicle studies. Here we will touch on just one phase of this problem.

Chart 8 shows a picture of the comparative operating costs—(gas, oil and maintenance) of 97 new trucks and 82 old trucks. The trucks in this comparison are all the same make and model.

The new trucks shown in the left-hand bar are 1945 to 1950 models, and their average operating cost per mile is 8.9 cents. The 82 old trucks (1938-1942) have an average operating cost of 14.4 cents per mile or 5½¢ more for each mile they were driven.

Annually, this difference would amount to about $25,000. These trucks, by the way, all see similar service and mileages. Although many managements do not keep cost records that would permit a close comparison of this kind, it is generally known that newer vehicles mean lower operating costs.

Check Depreciation Policy

In one case we studied, however, we found that accounting practices obscured the potential savings to be realized from replacing old vehicles. This particular operation had complete cost records on each vehicle, and we were able to determine quickly that their operating cost for 24 old trucks (1938-42) was $780 per year, per vehicle. This compared with an annual operating cost of $384 per truck for 12 trucks 1948 or later.

Now this dairy depreciated a truck in only four years. The annual cost of running an old truck vs. a new truck, when both operating costs and depreciation are considered, is shown in Chart 9.

Total costs for the old truck, fully depreciated, as shown in the left hand bar, are $780. Although operating costs for the new truck are only $384, adding depreciation of $437 brings total costs to $821. In other words, each replacement vehicle would increase annual delivery costs by $41. Obviously, in this situation, needed vehicle replacement would be delayed.

The next two bars show the picture with a six-year write-off.

In the last two bars, the figures are in favor of the new truck by $105. They are based on an eight-year write-off. With this write-off, the replacement vehicle saves $178 a year; nearly 25 per cent.

We recognize that depreciation policy is a many-sided question, and that, often, it is good business to take the most rapid write-off permitted by law. Such figures, however, should not make you think it's cheap to operate an old truck.

When considering vehicle replacement, you will do well to review the problem in the light of your actual experience.

Wholesale Routes

Now, we would like to point out a few of our findings with respect to the other side of your delivery operations—wholesale routes.

There is no need to emphasize to you the large volume to be secured from a wholesale business. But here, as in the case of retail customers, we would like to put the spotlight on delivery cost.

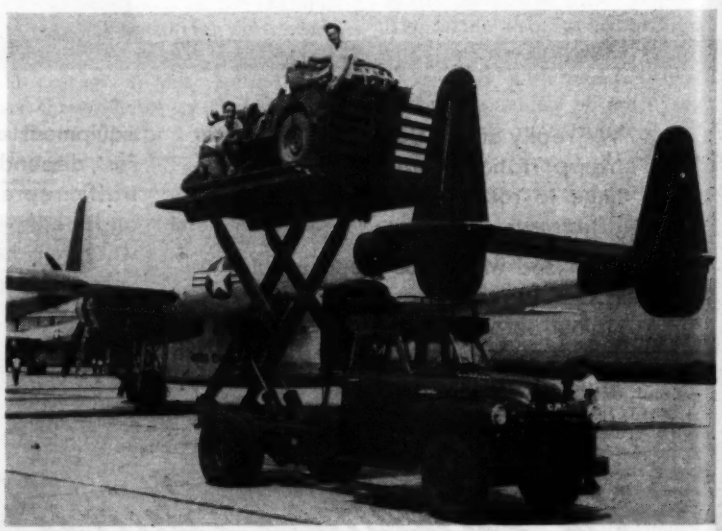
In the case of one dairy studied, we found the cost per stop on its wholesale routes came to 20 cents. This figure, of course, excludes driver's compensation, which would vary with order size.

Order-Size Analysis

If each spot must be charged with a delivery cost of 20 cents, it is clear that deliveries below a certain size—say $4 or $5—cannot be profitable. An order-size analysis for this dairy disclosed, however, that over half of all stops were for less than $5, and that about a third of all stops were for less than $3.

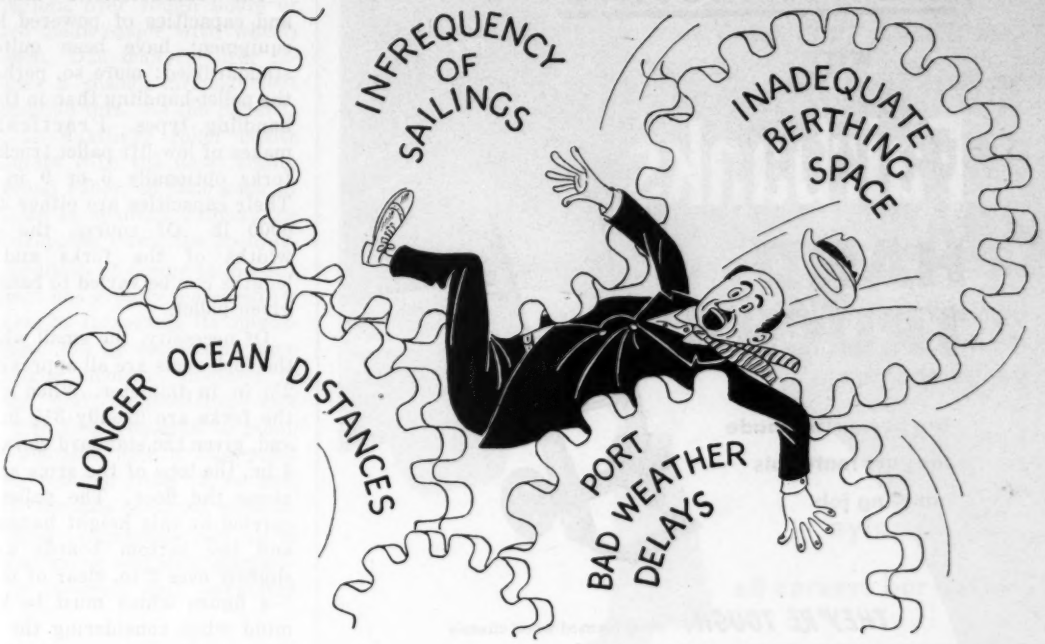
We made a detailed study of the route with the highest percentage of small stops. On this route, incidentally, nearly one stop in five was for less than one dollar. Chart 10 shows the picture for this route.

(Please Turn to Page 51)



This Elevator-Bed GMC truck shows off as it lifts a loaded jeep high off the ground. The truck can perform wonders and show amazing feats of strength lifting vehicles as heavy as ¾ of a ton to a height of 12 feet. Of great use to the armed forces, the GMC was used to load heavy equipment onto Air Force cargo planes during recent exercises at Fort Bragg, N. C. The equipment was later air-dropped to U. S. troops near the front lines.

Don't get caught in this Mesh!!!



THE UNFORTUNATE SHIPPER depicted above is really in trouble. He's meshed in a mess of miseries that means delays to his merchandise, causing actual money losses, and — what every trader dreads most—dissatisfied customers. Practical shippers avoid such consequences. They specify routing "VIA SAN FRANCISCO" — a Port famous for superiority of service. Frequency of sailings ranks first with practical shippers. Through San Francisco's Golden Gate last year — 1951 — sailed 4,497 vessels outward bound to world ports. That's a daily average of 12 ships. Think of it! Or take the matter of ocean distances. San Francisco is closer — in some instances by hundreds of miles — than any other California port, to Hawaii, Japan, Philippines, Hong Kong, Singapore, South Pacific, New Zealand and Australia. (U. S. Navy Hydrographic Office ocean mileage tables.) The land-locked harbor contains 18 miles of berthing space. It is free of weather-caused cargo-handling delays. The convenience and economy of the Foreign (free) Trade Zone are the talk of world traders everywhere. Special port facilities include Refrigeration Terminal (capacity equals 340 refrigerator cars); 500,000 bu. bulk grain terminal; bulk copra terminal; vegetable oil storage tanks, etc. The Port Traffic Department invites inquiries from shippers.

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SHORTER OCEAN MILEAGE
WORLD PORTS SERVED 268
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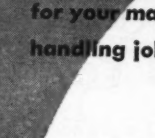
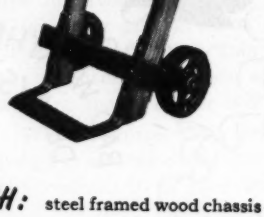
THEY'RE BALANCED: a COMPLETE line providing the right style for your particular material handling requirements.



Series 21 LOCK-WELD Swivel Casters eliminate the greatest cause of caster failure: the king pin.



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. . . Work Horses

(Continued from Page 44)

The characteristic dimensions and capacities of powered low-lift equipment have been quite well standardized; more so, perhaps, in the pallet-handling than in the skid-handling types. Practically all makes of low-lift pallet trucks have forks optionally 6 or 9 in. wide. Their capacities are either 4000 or 6000 lb. Of course, the overall widths of the forks and their lengths can be varied to handle any given pallet.

Of necessity, the small wheels in the fork arms are all approximately 2¾ in. in diameter. When lowered, the forks are usually 3¼ in. high, and, given the standard elevation of 4 in., the tops of the arms are 7 in. above the floor. The pallet when carried at this height hangs down and the bottom boards are but slightly over 2 in. clear of the floor—a figure which must be kept in mind when considering the use of this equipment on ramps and bridgeplates; as explained in the January issue of *DA*, P. 22.

We have, of course, been speaking here of trucks which handle double-faced pallets. Single-faced pallets, which actually are low skids, do not impose the same limitations on the equipment, especially in regard to the size of the wheel in the fork arms. If a machine is being selected to handle this type of carrier, it can have wheels whose size is limited only by the amount of clearance under the pallet.

Overhang is frequently a disturbing element in pallet operations. A load which extends beyond the edge of the pallet toward the machine may prevent the operator from inserting the forks sufficiently far into the pallet to allow the rollers to drop to the floor. One solution lies in having the forks 3 in. or more longer than the pallet. Welding a cross bar between the forks, so that the center stringer of the pallets rests against it, will assure correct positioning of the wheels, even with overhanging loads.

All of the features mentioned in selecting hand-operated equipment are just as important in considering powered trucks. Brakes, pressure lubrications, "dead-man con-

trol," etc., are essential elements in assuring good performance with safety.

Operations over rough floors or gaps are made easier with wheels in tandem. One manufacturer incorporates a shackle arrangement to accomplish this. As the pallet is raised, an auxiliary roller comes into contact with the floor, acting as a second roller, so that gaps of 2½ in. can be spanned without the rollers dropping down the opening.

The addition of power to low-lift equipment has greatly increased its usefulness by increasing its operating range, and by decreasing time and fatigue elements involved in elevating and transporting unit loads. The time required to pump up the machine with a foot pedal has been reduced from 12, or possibly 15, seconds to three seconds.

All these refinements add up to greater economy and less fatigue—thus, to lowered unit operating costs.

Building Height a Factor

Useful as powered low-lift equipment is, it is not needed in all types of operations. The trend today is toward single-story buildings. In such buildings reliance is usually placed on high-lift equipment to do the work of both transporting and tiering.

There are many multi-storied plants, however, which lend themselves to palletized operations. It is in these locations that low-lift powered trucks are the real work horses—used to move unit loads on skids or pallets in and out of freight cars and motor trucks, on and off elevators, and in and out of storage areas.

One feature of low-lift truck construction has been especially stressed in recent months—the matter of overall length. This is undoubtedly important where space is actually at a premium, as in operations in very narrow aisles. But it is not so important if low-lift equipment is to be used in conjunction with high-lift, since the latter generally requires wider aisles. The extra cost of an exceptionally short machine can hardly be justified if it is working with a machine which requires more operating space. ●

(Resume Reading on Page 28)

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two colors
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Send for cloth, cellophane-finished 44″ x 65″ map now. Stop delivery waste. Mark routes in crayon we supply. Washes off instantly. Use map for 10 days. Then, if you can get along without it, send it back . . . or send $42.50 and it's yours.

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...Materials Handling

(Continued from Page 38)

a short turning radius permits use of 8-ft aisles. The result is that this department is able to accommodate up to 9000 fully-loaded pallets (between 110 and 125 carloads) in the 60,000-sq-ft area.

A pneumatic-tube system facilitates carrying orders and paper work from floor to floor. The tube system connects the accounting room with the shipping floor and customer's service store.

Shipping and Receiving

Five box cars can be unloaded simultaneously through the overhead doors along the receiving aisle, which flanks the 400-ft railroad siding.

With 19 truck-loading doors along the 200-ft dock, that extends along the full length of the shipping department, and a complete absence of columns in the area, there is nothing to obstruct the free flow of merchandise from the adjacent warehouse to the delivery trucks on the large paved apron that completely covers this side of the building.

Expect 25% Man-hour Cut

"Greater efficiency is in evidence throughout the entire plant," said J. L. Sweetman, vice president and chairman of the Johnson Building Committee, in reply to a question on actual and anticipated results. "Our warehousing and shipping operations, for example, already show approximately 15 per cent reduction in man-hour handling," he continued, "and we fully expect to reach the anticipated 25 per cent.

"Most important, the smoother and faster flow enables us to give our customers fast service." ●

(Resume Reading on Page 20)

Packaging Workshop on Tour

A mobile packaging workshop, staffed by technically trained personnel of Reynolds Metals Co., Louisville, Ky., is making a nationwide tour of military bases and defense plants to teach some of the latest methods of protective packaging.

. . . Costs

(Continued from Page 46)

Looking at the bar on the left, the number of stops, it will be seen that almost one half of the stops were for less than $3. These stops, however, accounted for only 12 per cent of total route volume.

Almost the reverse of this is true with the large deliveries—those for more than $10. Although only 11 per cent of all stops were of this size, this 11 per cent was responsible for 47 per cent of total route business.

These general conditions are not unique to your industry.

Now, the question of who gets the small orders comes up. To get an answer to this question, we classified the 58 accounts on this route by total monthly volume. Then we sorted out the small orders (those under $5) into these volume brackets.

Aid to Accounts

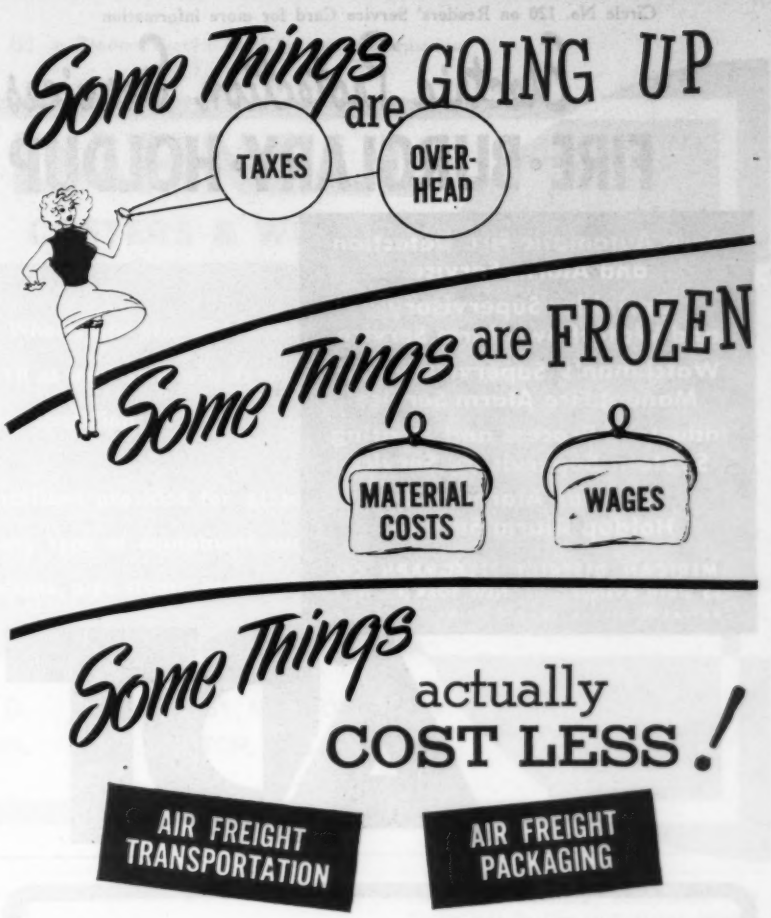
We found that less than one out of every five small orders was made as a convenience to large accounts —$100 per month and up. The great bulk of small orders were to accounts with low monthly volume. In fact, one quarter of these small orders went to 15 outlets with a monthly volume of less than $25 each.

If a single theme has run through this analysis, if our studies stretching over several months have unearthed a single over-riding issue, it is this—without facts, without detailed delivery cost figures you are like a pilot without instruments. Whether the problem be an evaluation of retail routes, a decision on vehicle replacement, or what to do about an unprofitable wholesale route, your judgment can be no better than the facts upon which you base it. ●

(Resume Reading on Page 27)

N. Y. Central Consolidates

New York Central has merged its properties with seven of its wholly owned subsidiaries; the New Jersey Junction, West Shore, New York and Fort Lee, Toledo and Ohio Central, Federal Valley, and Lake Erie Alliance and Wheeling railroad companies.



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Sample 1000 lb. rates* between Los Angeles and . . .	New York	Hartford	Boston	Philadelphia	Milwaukee	Chicago
FLYING TIGER Air Freight	$190.00	$195.00	$200.00	$186.00	$144.00	$144.00
Air Express	774.00	774.00	774.00	774.00	582.00	582.00
Rail Express	173.60	175.50	177.20	170.00	141.60	139.20

*Lower rates above 1,000 lbs.; slightly higher under 1,000 lbs. Call us for even lower directional commodity rates.

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. . . Remote Control

(Continued from Page 21)

have picked up a load. The pegs are numbered and colored to represent specific trucks.

Each driver keeps a record of jobs by a brief entry on a pad; indicating "from," "to," and "size of load." This report is helpful in tracing the occasional inevitable misplaced or misdirected load.

Handle 400 Calls per Shift

During the last month previous to the installation of the new system, telephone calls from the roving truckers to the dispatcher had averaged 162 a day. Following the installation of the new telephone system, the number of calls increased to an average of 206 a day by the end of the first 6 working days in September and, toward the end of September, to as high as 315 a day.

Calls between the dispatcher and the truckers now average 400 per shift, representing just about that many request loads. In addition, truck operators handle about the same number of routine pickups. They're always busy.

Load Flow Jumps 300%

The new system thus enables each truck operator to handle an average of three times as many loads per shift as he did before the central dispatch equipment was installed. This, in turn, allowed Pratt & Whitney Aircraft to move, with the same fleet of equipment, a flow of materials that continued to increase as the months went by.

Even the rapid expansion of our production called for after the outbreak in Korea was handled without additions to the fleet until April, 1951, when the work-load had grown to such a level that it was apparent more trucks were needed. Since that time, eight new fork-lift trucks have been added to the fleet. This has been done gradually, in pairs. In the meantime, all have been utilized to their full capacity, as permitted by the central dispatch system, before acquiring the next pair. ●

(Resume Reading on Page 22)

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Specify **DARNELL**
CASTERS & WHEELS

● Darnell Casters and Wheels are provided with both rubber-tired wheels as well as semi-steel wheels for satisfactorily meeting any floor condition.

● There are many adaptations provided for attaching Darnell Casters to most any type of equipment such as angle fittings, threaded stems, pipe stems, etc.

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MEN in the NEWS

(Continued from Page 13)

tion, Cleveland, Ohio. Mr. Brady has had wide experience in the materials handling field, including being director of research for the Material Handling Institute.

Robert B. Coleman has been appointed manager of sales operations for the Lamson Corp. of Syracuse, N. Y. Mr. Coleman comes to the company from 15 year's experience with the American Chain and Cable Corp.

G. B. Davis has been elected vice-president in charge of sales for the Baker-Raulang Co., succeeding **John R. Morrill** who has resigned. Mr. Davis joined the company in 1935 in the purchasing department.

Alfred E. Dorod and **Richard T. Tiebout** have joined the staff of field engineers of the Baker-Raulang Co. Both men will be available for consultation on materials handling problems and will work on the development of new methods and special attachments for industrial truck users.

Edward F. Gaston has been named president of the American District Telegraph Co., succeeding the late **Edmond A. Ward.** Mr. Gaston has been with the company since 1907.

A. Lee Gordon, Jr., has been appointed manager of the Memphis-Mid-South territory for the National Container Corp. Mr. Gordon has had many years experience in the shipping container industry.

Robert I. Hicks has been promoted to the presidency of the Lamson Corp. of Syracuse, N. Y., operating subsidiary of Lamson Corp. of Delaware. He will continue as vice-president of the parent company, whose president is **Carl F. Dietz.** Mr. Hicks' promotion is part of a program of further expansion of the Lamson Corp. of Delaware. He joined the company in 1939 as general sales manager and was elected vice-president in 1941. **Francis D. Weeks,** to be chairman of the board, will continue as vice-president and treasurer.

Maynard W. McMillan has been named representative for Baker industrial trucks in the southwestern Ohio territory for Baker-Raulang Co. Mr. McMillan has been with the company since 1940, since 1944 in charge of advertising and public relations.

David W. Niven has been named advertising manager of the Lewis-Shepard Products, Inc., makers of materials handling equipment. Mr. Niven was in the advertising promotion department of *Life* magazine.

Willard C. Shull has been named special assistant to the president of Gould-National Batteries, St. Paul, Minnesota. Mr. Shull has been with the company since 1937, starting in the sales department.

George F. Walsh has been appointed sales promotion manager for Gould-National Batteries, Inc., Trenton, N. J. Mr. Walsh comes to Gould-National from Baldwin-Lima-Hamilton Corp. where he held a similar position.

Milton J. Weber has been appointed vice-president, procurement, of the Frank G. Hough Co., Libertyville, Ill., makers of tractor shovels. Mr. Weber has had wide sales and purchasing experience with the company.

R. Thomas Willson has been named advertising and publicity manager of the Baker-Raulang Co., Cleveland, Ohio. Mr. Willson was formerly with Yale & Towne Mfg. Co.

Stanley Price, Western Electric Co., Chicago, has been elected president of the Society of Industrial Packaging and Materials Handling Engineers. Other officers recently elected are **Paul O. Vogt,** General Electric Co.,

(*Please Turn to Page* 55)

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Sturdily built of kiln-dried smooth lumber glued to 100% Kraft double face corrugated panels—Is the strongest wardrobe available.
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$58.80 Per Dozen. Weight 400 lbs. Per Dozen Net 10 Days. F.O.B. Homewood, Ill. Special Price in Pool Cars — Van Loads Or Carload Lots—Phone 133

NEIL BOX CO.

HOMEWOOD, ILL. (Chicago Suburb)

Chuting the NEWS (Continued from Page 42)

Labor Dept. Finds Wage, Hour Violations in Transit Industry

A selected few employers in the highway transportation industry show a need for improvement in complying with the amended Fair Labor Standards Act according to the 1951 annual report of the U. S. Labor Department's Wage and Hour and Public Contracts Divisions.

The statistics on the first full year of operations under the revised Federal Wage and Hour Law show that 52 per cent of the employers singled out for investigation were found to have violated the Act's minimum wage, overtime pay or child-labor provisions.

The Divisions found that 19 per cent of those investigated failed to observe the minimum wage regulation; 42 per cent were mentioned in overtime pay violations; and violations of the child-labor provision were found in three per cent of the cases.

Equipment Too Specialized?

A survey by the American Society of Tool Engineers has found that much of today's material handling equipment is too specialized to meet the requirements of the nation's expanding production economy.

The study was made among thousands of industrial executives and production engineers of large to small companies; 53 per cent of those studied found a need for more versatile equipment, 24 per cent wanted equipment that was easier to operate.

●

MORE CELLOPHANE IN '52—Du Pont's increased production of cellophane makes packaging film available in greatest supplies since 1942.

●

SCHOOL ON RAILS—Rock Island Lines now equipped with special car to school personnel in maintenance and operation of diesels.

●

TRUCK-TRAILER OUTPUT DROPS—Despite a prediction of 62,500 truck-trailers for 1952, production will be 4,500 short of last year.

●

FINED $500 PER TRUCK—ICC imposed a total of $1500 in fines on New Jersey and New York carriers for hauling inflammable liquids without necessary explosives-warning signs.

●

HIGHER SHIPPING COSTS—A sudden cutback to parcel post size and weight limits in effect before 1915 has caused higher packaging and shipping costs says George F. McKiernan, president, National Council on Business Mail.

●

LOADED TRAILERS SHIPPED BY SEA—Following tests on coastwise shipping, the Army Transportation Corps has begun ocean shipment of loaded trailers for faster delivery of high priority material to the Far East.

●

(Resume Reading on Page 15)

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Men in the News . . .

(Continued from Page 53)

Schenectady, N. Y., board chairman; Ray C. Sell, Koehring Co., Milwaukee, Wis., vice-chairman; J. L. Ware, Sears, Roebuck & Co., Chicago, executive vice-president; G. C. Cunningham. North American Aviation, Inc., Los Angeles; H. E. and I. E. Thomas, Ford Motor Co., Aircraft Engine Division, Chicago, both vice-presidents; M. A. Grogel, Fairfield Paper and Container Co., Chicago, treasurer; and A. S. Roberts, Insurance Co. of North America, Philadelphia, secretary.

Warehousing

Christopher J. Grimley, Wiggin Terminals, Inc., Boston, has been elected to serve a second term as president of the Massachusetts Warehousemen's Assn. Also elected for second terms were Paul D. Burrill, Quincy Market Cold Storage & Warehouse Co., Boston, vice-president; and H. Sherburne Wiggin, Manufacturers Warehouse, Boston, treasurer. Paul L. Amon, Atlas Terminal Stores, Boston, was elected secretary to fill a vacancy.

OBITUARIES

Charles G. Anthony, consultant in labor and rate matters for the Motor Truck Assn. of California, in Los Angeles, at age of 67. Mr. Anthony had been active in transportation affairs for many years. At various times, he was ODT regional director for Puerto Rico, executive vice-president of the Motor Truck Assn. of Southern California, and vice-president of Pacific Freight Lines. He had also held positions with several railroads.

William Lee Cotter, president of the Cotter Merchandise Storage Co., and chairman of the board of the Cotter Moving & Storage Co., on January 4, at the age of 69. Mr. Cotter succumbed suddenly to a heart attack at his home in Akron, Ohio. A former president of the Mayflower Warehousemen's Assn., and a member of the American Warehousemen's Assn., Mr. Cotter was a nationally known figure in the warehousing and moving industry.

Frederick R. Cunliffe, traffic manager of The Rust Engineering Co., on December 17, at the age of 67. Mr. Cunliffe suffered a heart attack in Pittsburgh. Well known in traffic circles, Mr. Cunliffe joined the Rust Co. in 1936.

Archibald B. Pilkey, vice-president and part owner of W. H. Pilkey & Sons, Inc., Buffalo, a trucking and rigging firm, at the age of 63. Mr. Pilkey entered the trucking field in 1912 when he began work for the firm founded by his father.

William F. Roth, former account manager with Reo Motor Truck Co., Philadelphia, at the age of 80, in Philadelphia. Mr. Roth retired last year having been associated with the truck dealer business for 50 years.

John H. Smith, president of the Jones of Utica Trucking Co., Utica, N. Y., on November 14, at the age of 61. Mr. Smith was a past president of the New York State Warehousemen's Assn. and had had a long career in the warehousing industry.

(Resume Reading on Page 15)

Appliance Movers Like

Escort
HAND TRUCKS

The Truck with the CRAWLER TREAD

CRAWLS on Roller Bearings up and down steps

Everybody likes this
APPLIANCE TRUCK!

The ideal truck for every purpose! No lifting . . . no fatigue . . . carries a full load safely up and down stairs and crawls over obstructions. Your men will appreciate the Escort truck.

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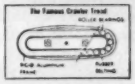

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Burley, Idaho	Hermiston, Ore.	Missoula, Mont.	Salem, Ore.	Walla Walla, Wash.
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within the LAW

By Leo T. Parker *Legal Consultant, Distribution Age*

MARKETING

A state law which authorizes you to fix retail prices may not be valid

You cannot rely on the validity of a state law which authorizes you to fix prices at which retail dealers must sell your merchandise.

Case in point: It was shown that a state passed a law which authorized manufacturers to establish prices at which their merchandise must be sold to retail purchasers. A retail dealer violated this state law and made sales of merchandise at prices considerably below the minimum price.

In subsequent litigation, the higher court held the statute void and invalid, saying, "while the legislature of the state may under the police power enact laws for the safety, health, morals and economic welfare of the people, it cannot delegate the exercise of legislative power to private persons. (*Schwegmann Brothers v. Louisiana Control*, 43 So. (2d) 248, Louisiana.)

If part of an order is accepted, payment for the complete order must be paid.

You cannot avoid paying for a complete order of merchandise if you accept a part of that order. If seller ships a part of an order of merchandise, which through error does not conform to the purchaser's specification, and the purchaser accepts and pays for this shipment, the shipper can compel him to accept and pay for the complete order.

Case in point: A purchaser gave a manufacturer a written order for 110,000 Kamm Baseball Games "to be mounted on 30 point chip." This order was promptly acknowledged by the manufacturer in a written "acknowledgment of order." The manufacturer immediately ordered from its suppliers 20 point chipboard and began mounting 60 pound lithographed paper sheets. During the month of November it delivered, and the purchaser accepted, 46,100 games. The purchaser paid for the games delivered, but refused to accept the balance of the order.

The manufacturer sued the purchaser for $19,621; the profits he would have earned had the purchaser accepted and paid for the balance of the games. The purchaser contended that he could not be held liable because the manufacturer had breached the contract by not following the specifications called for.

Nevertheless, the higher court held the purchaser liable to the manufacturer for the full damages. The court said, "there is an additional fact, more weighty than those recited. This is that defendants (purchaser) received, paid for, and distributed to the retail trade thousands of these games without ever once complaining that they did not comply with the terms of the contract."

Hence, the court decided that since the purchaser had accepted a part of the order *without any complaint*, he was obligated to accept and pay for the balance of the order. Further, the court clearly explained that a seller is entitled to recover on a breached contract the entire profits he would have earned had not the purchaser breached the contract. (*Rode & Brand v. Kamm Games, Inc.*, 181 Fed. 2d) 584.)

A person cannot be compelled legally to testify against himself

You can avoid conviction under criminal statutes if you prove that you were forced to testify against yourself.

Case in point: Smith was the sole owner of a corporation engaged in the fabrication, purchase, and sale of textile goods which received high preference ratings during the war. Testimony showed that Smith used these top priorities to obtain over 2,500,000 square yards of material.

Further, Smith by means of preference ratings obtained and sold over 2,000,000 yards of fabrics of a wide variety of colors and finishes. These were resold by Smith's corporation, often still in their original packing, to manufacturers of civilian clothing at prices far in excess of the maximum established law.

In these transactions, Smith used fictitious names, gave false descriptions of goods and prices, and falsified invoices. The money paid for the goods arrived by circuitous and devious routes into the bank accounts of either Smith or his corporation.

The lower court convicted Smith of unlawfully obtaining preference ratings in the purchase of textiles, of illegally diverting the textiles so procured, and of keeping false records of transactions.

Smith appealed to the higher court contending that his conviction was illegal since some of the evidence used to convict him was compiled from his testimony given before an examiner of the Office of Price Administration in response to subpoenas issued by that office.

In view of this evidence, the higher court *reversed* the conviction of the lower court, saying that although the evidence amply sustained Smith's conviction, no person may legally be convicted on his own testimony. (Smith v. United States, 69 S. Ct., 1000.)

Where no fraud is involved, an unpatented product may be copied and sold

You can copy and sell a product and not be liable if the product is not patented and if you do not practice fraud.

Case in point: A distributor entered into a contract with a molding company to manufacture plastic boxes, as containers for fruit cakes, which he needed to fill an order he had taken from a bakery company. Soon after the first order for boxes was filled, the distributor made a contract with another molding company to copy the first molding company's boxes. This company then sued the distributor for damages claiming that the latter had practiced "unfair competition" by copying its boxes.

The higher court refused to hold the distributor liable, saying that the testimony failed to show that he had directly or indirectly represented to customers that these particular boxes were manufactured by the first molding company, thus had practiced no fraud. The court explained further that since the plastic boxes for cakes were not protected by a patent, anyone could, without liability, make and sell them. (*Tri-State Plastic Molding Company v. Ruzak Industries, Inc.*, 181 Fed. (2d) 809.)

WAREHOUSING

You can collect if your warehouse receipts are sold for less than face value

Holders of warehouse receipts cannot sell them for less than their face value without becoming liable to the owner for their full value.

Case in point: A bank held warehouse receipts as security for a loan made to White. White defaulted and the bank sold the receipts for less than their face value.

In later litigation, the higher court held the bank liable to White for the difference between the value of the warehouse receipts and the amount for which the bank sold them. The court said, "A warehouse receipt is regarded in ordinary commercial transactions as a symbolic representation of the property itself." (*Edward L. Eyre & Co. v. Hirsch* 218 Pac. (2d) 888.)

(*Please Turn to Page* 88)

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GIVE YOU EFFICIENT AND ECONOMICAL COVERAGE OF THE ENTIRE METROPOLITAN SECTION AND ADJACENT TERRITORY

CHECK THESE ADVANTAGES

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W. W. Huggett, Pres. and Gen. Mgr.

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(*Continued from Page* 15)

Washington Trends

Executive agencies of the government, primarily through the General Services Administration and the Munitions Board, are getting together under "a general agreement" for the purpose of standardizing specifications as well as packaging requirements and inspection policies for government procurement.

. . . Recent amendments to M-46 (Packaging Closures) will result in greatly reduced supplies of aluminum closures, beverages, chemicals, cosmetics and similar non-food products.

. . . Changes in M-25 (Cans) has increased the quantity of cans which may be used for packaging hand soap and some specific food items.

. . . Stocks of primary paper and paperboard have improved enough that use of DO ratings, except for the military and machine tool orders, has been suspended.

. . . Control officials increased the first quarter allocations to wheelbarrow manufacturers to some extent because of the depleted inventories and inventory backlogs for industrial types.

Fair Profits Guide

For the first time, those holding or entering deals with the government for manufacturing, warehousing, or other contractual services will have a pretty well-defined definition of what is considered a fair profit in the eyes of Uncle Sam. The Renegotiation Board is preparing to issue shortly, probably in about 30 days, its new regulations governing its methods of dealing with industry.

Among other things, profits will not necessarily be allowed on a fixed percentage of costs. For instance, a firm that makes no real effort to keep down costs might end up with no profit at all. And, if a firm's costs are higher than others in the same field, the difference must be well justified.

Less Highway Assistance

Protests from Congressmen and other sources have resulted in control officials being able to dig up some additional roadbuilding materials for the second quarter. But aside from availability of materials, it is indicated that states and municipalities may have to get along as best they can with less financial help from the federal government.

The 1953 budget request for federal aid is 20 per cent less than the usual amount. For the past several years, the appropriation has been $500,000,000. For the next fiscal year, Congress is being asked for $400,000,000.

Spare Part Supplies

Current parts supply is generally regarded as fair. The outlook is best for automotive and other internal combustion engines during the remainder of the first half. Government agencies say inventories were in relatively good shape on Jan. 1, partly due to no scare buying. Some see spot shortages during last half as demand increases to keep old equipment in operation. Parts picture is darkest for electric motors because of copper scarcity.

(*Please turn to Page* 74)

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COMPLETE WAREHOUSE FACILITIES

for the proper Storage
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Merchandise in the Kansas City trade area.

POOL CAR DISTRIBUTION

We invite your Inquiries

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in taking your order; in following your instructions; in furnishing a careful accounting—that's Long Warehouse service!

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Pool Car Distribution
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Merchandise and Household Storage—Pool Car Distribution
We operate Thirty Trucks and have connections to all points in the State. Our buildings are clean, both Fire and Non-Fireproof, located on the lines of the C. B. & Q.—Mo. Pacific and Union Pacific with all other lines entering either city, absorbing switching.
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Warehousing Survey

Shortly, it may become easier to get approval and materials for the construction of new and expansion of existing warehousing and storage facilities. Defense production officials apparently are recognizing the fact that there may not be sufficient space available to handle the increasing production now beginning to pour from expanded manufacturing facilities.

Defense Transport Administration has started a survey intended to find out if present and planned space facilities are adequate, particularly in the refrigerated field which looks to become a No. 1 problem.

(Resume Reading on Page 17)

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(*Continued from Page 56*)

WAREHOUSING

A warehouse receipt without endorsement may sometimes transfer title

Warehousemen often ask questions involving the validity and lawful transfer of the title in stored goods through warehouse receipts which the present holder purchased, borrowed, found, stole, and the like. They also wonder frequently whether a warehouseman is liable to the holder of warehouse receipts for goods stolen from the warehouse or destroyed by fire.

Modern higher courts consistently hold that the circumstances may be such that delivery of a warehouse negotiable receipt, without endorsement, may transfer title in the stored goods, if the true owner *intended* to transfer the legal title when the receipt was delivered.

Case in point: In this case, where the above point of law was involved, the court said: "For all purposes the transfer of goods in storage *is complete* upon delivery of the receipts *with intent* to transfer title to the goods represented thereby, that an endorsement of the receipt adds nothing to the effectiveness of such delivery. (*National Union Bank v. Shearer*, 74 Atl. 351.)

Moreover, a warehouseman is not liable to the holder of a forged or altered receipt, although he delivered the goods represented by such receipt to the original holder without demanding presentation of the receipt. Under no conditions may a person who unlawfully possesses a warehouse receipt demand the goods or any other value. (*See Weaver Co. v. Batesville Co.*, 270 S.W., 509.)

On the other hand, where a negotiable warehouse receipt which has been issued properly endorsed and negotiated is transferred to one who has *in good faith* paid value therefor, the warehouseman is liable to the holder of such receipt if he refuses to deliver the merchandise to such holder who offers to surrender the receipt with a lawful endorsement.

Warehouseman is liable if he delivers goods to holder of found or stolen receipt

Various courts have held that a warehouseman is liable if he delivers stored goods to a person who finds or steals a warehouse receipt, irrespective of whether or not the receipt is endorsed.

Case in point: A man named Lake found several valuable warehouse receipts. He presented these receipts to the warehouseman who delivered the goods to him, although the receipts were not endorsed. When the owner of the receipts discovered that he had lost them, he sued the warehousemen to recover the value of his goods.

In holding the warehouseman liable the court said: "A thief who finds a receipt can give no more title to a purchaser from him than he could to property he had found or stolen . . . If this is the law, even where the last receipt had been endorsed in blank by the owner . . . how clear it is that the finder of an unendorsed receipt, which on its face shows the name of the true owner, cannot by selling or surrendering such receipt transfer the title of the owner."

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. . . LETTERS

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It can readily be seen that Railway Express charges are not competitive in that they greatly exceed the parcel post charges. The difference is so much in favor of parcel post that many shippers will find it advantageous, under the present parcel post weight limits, to use more packages and still distribute at a saving by parcel post.

It is significant to study and realize the implications of the very slight difference in additional revenue (14 cents average additional revenue for two cartons in the accompanying table) for the Post Office Department for handling two cartons under the new weight regulations than for one carton under the old regulations.

In other words, the Post Office Department apparently could be handling 100 per cent more packages for very little more revenue.

For example, will $1.68 postal revenue for handling two cartons weighing 20 lb each be compensatory to the Post Office Department if $1.54 (or only 14 cents less) apparently was considered reasonable for handling one carton weighing 40 lb, in the same zone, before the new weight regulations were in effect?

If this situation—affecting a few firms within the writer's knowledge—is at all prevalent nationally, it would appear that the recent increases in parcel post rated to decrease the deficit in the Post Office Department might be more than vitiated as a result of increased handling costs caused by the new weight limits placed on parcel post.

It also would appear that the diversion to commercial agencies, as intended by Congress, would not be accomplished; except in those instances where shipments are such that they cannot be made in more than one carton or package.

There have been national campaigns in the recent past, and may be more necessary in the future, to conserve packing materials; such as corrugated and similar cartons and draft paper for packages. These parcel post weight limits complicate what might be a problem by using more of such materials, as well as increasing to some extent actual packing labor and costs.

These added costs might well be justified if the intent to increase the Post Office Department revenues and decrease its deficit were realized. Until it has been definitely established that the additional net revenues have been realized for parcel post, as intended by Congress—and there seems to be ground for reasonable doubt that there will be additional net revenues because of additional handling burdens—might it not be wise that parcel post costs and losses be given very careful attention by Congress in the national interest? — *Donald K. Graham, Traffic Manager, The Butterick Co., Inc., Altoona, Pa.*

(Wonder if Postmaster Donaldson figured the extra revenue from the new 2-cent postal card will make up the deficit?—ED.)